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Rhodophyllus Notebook 9

L. R. Hesler

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Jubatae

Eu-Eutoloma

Nolanea

By A.H. Smith

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Key to Sections of Rhodophyllus

1. Stipe typically more than 4 mm. thick at apex 2

1. Stipe typically less than 5 mm. thick at apex 3

2. Pileus typically dry and fibrillose to

squamulose Section Jubatae /

2. Pileus moist and hygrophanous or ± viscid . . .

. . . Section Eu-Entoloma

3. Pileus typically conic to obtusely umbonate or

plane (but not depressed). Section Nolanea

3. Pileus typically convex-depressed (use mature

caps) Section Leptonia

follows 18

starts with 72

details under

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Section Jubatae

Pileus not hygrophanous, surface dry and fibrillose to scurfy or squamulose; stipe typically 4 mm. thick or more at apex.

Key to subsections

- 1. Cheilocystidia absent subsection A
- 1. Cheilocystidia present. subsection B.

also with #8
(p. 7)

Subsection A.

Key to species

- 1. Pileus purplish to vinaceous brown 2
- 1. Pileus gray (or some other color - not as above) 4
 - 2. Stipe vinaceous gray at apex and covered with a
vinaceous scurfiness . . 1. R. griseocyanum var. roseum
(Sm-33-1063)
 - 2. Stipe lilac-purple to violet when young 3
 - 3. On humus; odor spermiatic at first, soon
vanishing 2. R. Sm-37416
 - 3. On conifer wood; no odor. 3. R. placidus (Sm-20138)
 - 4. Carpophoroids almost regularly present in the
vicinity of agaricoid fruiting bodies . . .4. R. abortivus
 - 4. Not as above 5
 - 5. Spores 6-8 x 5-5.5 μ 5. R. Sm-16520
 - 5. Spores 8-10 x 7-9 μ or larger 6
 - 6. Spores 8-10 x 7-9 μ ; consistency exceedingly
fragile 6. R. Sm-16902
 - 6. Spores 9-12 (13) x 7-8 μ ; consistency only
moderately fragile. 7. R. Sm. 29822

Rhodophyllus Sm.-33-1063

var. roseum^S griseocyaneum^S

Pileus 3-6 cm. broad, with a slight umbo and a spreading margin, surface dry, innately fibrillose-squamulose toward margin disc merely fibrillose, evenly colored, near "vinaceous brown", beneath the squamules vinaceous gray; odor and taste none; lamellae "onion skin pink", close, adnexed, thickish, narrow to moderately broad, edges eroded; stipe central to eccentric, 5-8 cm. long, 6-10 mm. thick, enlarged evenly toward base, apex tinged vinaceous like the pileus, covered with a vinaceous scurfiness, lower portion pallid, longitudinally striate, solid.

Spores 7-9 x 4.5-5.5 μ , angular-elliptic, nearly hyaline in KOH, yellowish in iodine; basidia 28-35 x 9-10 μ , four-spored, content homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel; pileus trama homogeneous, surface hyphae with vinaceous content when fresh and with free ends which are the innate fibrils, entirely hyaline in KOH; clamp connections present.

Habit, habitat and distribution: Scattered on humus, in hardwood groves, Pinckney, Mich., Sept. 30, 1933, Sm-33-1063.

Observations: The lack of cheilocystidia distinguishes this species from the variants of R. cyaneus.

Rhodophyllus -Sm-37416

Pileus 3-7 cm. broad, obtusely conic with an incurved margin, becoming expanded-umbonate, surface dry and minutely fibrillose-squamulose, "benzo brown" young but dingy brown ground color finally showing as the squamules become separated in age, margin even or finally somewhat sulcate; flesh pallid, taste mild, odor spermatic at first but soon vanishing; lamellae white at first, close, broad, deeply adnexed to nearly free, edges uneven to eroded; stipe 8-12 cm. long, 6-10 mm. at apex, enlarged downward, violet ("light purple drab") except for whitish base from appressed fibrils, which cause it to be appressed-fibrillose and longitudinally fibrous striate, in age at times lacerate from breaking up of cuticle.

Spores 8.5-11 x 5.5-7 μ , angular-elliptic, with a broad depression and prominent apiculus, pinkish in KOH; basidia four-spored, 36-46 x 9-11 μ , with somewhat granular content just prior to sporulation; pleurocystidia none seen; cheilocystidia absent to rare and resembling inflated basidioles; gill trama parallel, subhymenium subgelatinous in KOH; pileus trama homogeneous beneath a surface layer of broad, (10-15 μ) radially arranged hyphae and also with fascicles of cystidioid end-cells with pinkish brown content (in KOH), pigment also located in uppermost radial hyphae; clamp connections present.

Habit, habitat, and distribution: Gregarious on humus, Lower Falls, Tahquamenon Falls State Park, August 6, 1951, collected by Sheila Hoare (Sm.-37416)

Observations: The dull purple cap with its minute squamules, broad white gills and purple stipe along with the evanescent spermatic odor are distinctive field characters. The spores are larger than in 33694 and have more color.

Rhodophyllus placidus Sm.-20138

Pileus 3-5 cm. broad, convex with an incurved margin, becoming broadly convex in age, surface dry, appressed-fibrillose or the fibrils arranged in appressed fascicles, color "purple drab" to "light vinaceous drab" over disc, extreme margin "anthracene violet" (caps all old); flesh pallid watery gray, equal, odor and taste not distinctive; lamellae depressed-acute, moderately close, 4-5 tiers of lamellulae, narrow to moderately broad, (4-6 mm.), equal, horizontal or slightly ventricose, whitish, gradually tinged pinkish, edges slightly serrate; stipe 3-5 cm. long, 5-10 mm. thick, equal or slightly enlarged at base, hollow, fragile, cortex subcartilaginous, pallid watery gray within, surface fibrillose to fibrillose scurfy from bright violet fibrils, becoming dingy violaceous but apex usually retaining the bright violet("anthracene violet") color, extreme apex pruinose.

Spores 2-11 x 5-6 μ , angular-elliptic, angles obscure, pinkish in KOH; basidia four-spored; pleurocystidia and cheilocystidia none; cuticle of pileus fibrillose, the pigment (violet) in the cell sap.

Habit, habitat and distribution: Single along conifer logs, Rhododendron, Ore, Oct. 24, 1944, Sm.-20138.

Observations:

Rhodophyllus abortivus (B & C) Sm.-18903

Pileus 4-10 cm. broad, convex with an inrolled margin at first, expanding to broadly umbonate, plane, or slightly depressed, margin uplifted at times, surface dry, appressed-fibrillose or covered with small appressed to slightly recurved fibrillose scales, color gray to avellaneous ("light drab" to "avellaneous"), margin minutely cottony tomentose at first, occasionally watery spotted to subzonate near margin; flesh thick, white dry, odor somewhat nauseous, taste slightly farinaceous; lamellae close (60-70 reach the stipe), narrow to moderately broad, \pm 5 mm. or more, slightly adnexed to short-decurrent, some with decurrent lines on the stipe, pallid gray when young, finally pale "fawn color", edges soon becoming eroded; stipe central to somewhat eccentric, 4-10 cm. long, 8-15 (20) mm. thick, terete or compressed, clavate, at times flared at apex, solid, white within, surface \pm concolorous or paler than pileus, \pm scurfy especially above, densely white mycelioid over basal area, mycelium soft and white; carpophoroids preceding or accompanying agaricoid carpophores, these fleshy bodies of soft white tissue, variously shaped, and rarely producing basidia on exposed surfaces.

Spores "fawn color" in deposit, 8-10 x 4.5-6 μ , angular-elliptic, pinkish in KOH, yellowish in Melzer's sol. (check); basidia 28-35 x 8-9 μ , four-spored; pleurocystidia and cheilocystidia none; gill trama parallel or nearly so, hyphae 6-12 μ diam., subhymenium not distinctive; pileus trama homogeneous, cuticle \pm interwoven, of hyphae 5-8 μ , walls slightly colored,

(more)

clamp connections present (check).

Habit, habitat, and distribution: Scattered to caespitose on low ground in hardwoods, often around rotting stumps and logs, or on them, common during late summer and fall, throughout the hardwood areas of the United States. (Sm.-18903).

Observations: It is a mistake to call the carpophoroids "abnormal fruiting bodies" because they are a normal part of the fruiting phase of the species, i. e. "normally" present. We now know that such bodies are characteristic of a fairly large number of agarics in various genera.

Rhodophyllus Sm.-16520

Pileus 4 cm. broad, plane with a deeply umbilicate disc, surface typically unpolished (wet or dry), "hair brown" or darker but appearing pale gray along the margin due to appressed fibrils, canescent and somewhat fibrillose over all in age, margin slightly plicate; flesh very thin (1.5 mm), equal, pale hair brown, odor and taste very strongly farinaceous; lamellae close, decurrent, moderately broad, concolorous with the pileus, becoming dingy vinaceous, thin and flabby and cracking transversely very readily; stipe 3.5 cm. long, 6 mm. thick at apex, 1 cm. at base, narrowly clavate, hollow, glabrous, concolorous with pileus or at base paler.

Spores 6-8 x 5-5.5 μ , angular-elliptic, pinkish in KOH, yellowish in Melser's sol.; basidia four-spored, 26-32 x 7-9 μ , content homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel, brown in KOH; pileus trama homogeneous; brownish in KOH, hyphae over surface radially arranged; clamp connections absent.

Habit, habitat and distribution: Single on thin moss-covered soil beside a trail, Park Creek, Mt. Baker Wash., Aug. 31, 1941, Sm.-16520.

Observations: One of the "Clitopilus" series.

Rhodophyllus Sm.-16902

Pileus 2.5-7 cm. broad, sharply conic to conic-campanulate, margin incurved when young, becoming expanded and with a conic umbo, margin usually remaining decurved, button stages showing a rudimentary veil, when wet "hair brown" and appearing glabrous, soon fading to "drab gray" (but not typically hygrophanous), innately appressed fibrillose, some with watery zones persistent along margin; flesh thin but equal (\pm 2 mm.), concolorous with surface, exceedingly fragile, taste and odor mild; lamellae pale gray becoming "cinnamon drab", ascending-adnate, seceding readily, broad (7-9 mm.) broadest next to the stipe, close to subdistant (40-46 reach the stipe, 2 tiers of lamellulae) edges even, very fragile; stipe 3-6 cm. long, 6-10 mm. thick, equal, hollow, exceedingly fragile and readily splitting longitudinally into segments, long-striate and covered by a thin gray-canescant appressed fibrillose coating, \pm glabrescent, \pm concolorous with pileus.

Spores 8-10 x 7-9 μ , angular-subglobose, pale pink in KOH, yellowish in iodine; basidia four-spored, 36-42 x 9-11 μ , content homogeneous; pleurocystidia none seen; cheilocystidia none; gill trama parallel, thin, brownish in KOH, subhymenium thin and hyaline; pileus trama homogeneous and pale blister in KOH beneath a poorly formed cuticle of narrow (3-5 μ) non-gelatinous hyphae; clamp connections present.

Habit, habitat and distribution: Gregarious in arcs in a mountain meadow, Anderson Look Out, Mt. Baker National Forest, Wash., Sept. 13, 1941, Sm.-16902.

Observations: The gray carpophores, fibrillose pileus, mild odor and taste, fragile consistency and subglobose

spores are distinctive.

Rhodophyllus Sm.-29822

Pileus 3-4.5 cm. broad, convex-depressed with the margin incurved and much lobed, expanding to broadly convex or plane with a shallowly depressed disc; surface conspicuously squamulose with flat fairly broad squamules around the disc, margin striate, color dominantly "buffy brown" over striae and paler yellowish brown between; flesh pallid, odor and taste none; lamellae pallid ("tulleul buff") or slightly grayer, finally flesh-colored, close, broad, broadly adnate becoming adnexed, readily seceding; stipe 4-6 cm. long, 3-5 mm. diam., terete to compressed, glabrous except for white mycelium at base, naked and moist, concolorous with pileus or a grayer brown, apex pallid.

Spores 9-12 (13) x 7-8 μ , angular-elliptic, pale pink in KOH, yellow in Melzer's sol.; basidia four-spored, 36-42 x 9-10 μ , content globular; pleurocystidia and cheilocystidia none; gill trama parallel, the cells broad and with oily globular content, subhymenium not distinctive; pileus trama homogeneous beneath a thin non-gelatinous pellicle of hyphae with smoky brown content (in KOH), many narrowly clavate hyphal end cells appressed over surface or grouped into decumbent fascioles; tramal body hyaline in KOH and cells with globular content; no clamp connections present.

Habit, habitat and distribution: Gregarious under cedar, Lower Kantz Creek, Mt. Rainier National Park, Wash., Aug. 4, 1948, Sm.-29822.

Observations:

Section Jubatae

Subsection B

1. Pleurocystidia present 2
1. Pleurocystidia absent. 3
 2. Lamellae narrow; pleurocystidia with dull yellow
content revived in KOH 8. R. Sm-7424
 2. Lamellae broad; pleurocystidia hyaline
revived in KOH 9. R. Sm-10130
3. Cheilocystidia filamentous or base slightly
enlarged, 30-54 x 7-9 μ 10. R. Sm-39443
3. Not as above 4
 4. Cheilocystidia 36-48 x 9-14 μ , broadly fusoid
to mucronate-pointed 5
 4. At least some cheilocystidia capitate to
subcapitate 6
5. Spores 11-16 μ long 11. R. Sm-32-547
5. Spores 9-11 μ long. 12. R. Sm-29445
 6. Gill edges darker gray than faces
(marginate) 13. R. Sm-34021
 6. Gill edges not marginate. 7
7. Odor and taste strongly farinaceous 14. R. Sm-11032
7. Odor and taste not distinctive. 8
 8. Pileus convex to plane or only very slightly
umbonate, "cinnamon drab" (gray tinged vinaceous) . . .
. . . 15. R. Sm-39199
 8. Pileus conio-umbonate 9

9. Pileus dark gray ("drab") or with only a faint
vinaceous tinge 16. R. Sm-20139
9. Pileus with distinct violaceous to lavender tones 10
10. Spores 7-9 x 5-6 μ ; pileus "dark purple drab"
to "dark vinaceous drab" 17. R. Sm-33694
10. Spores 8-10 x 6-7.5 μ ; pileus "pale lavender
violet" to "mauvette" 18. R. cyaneus (Sm-32-81)

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Pileus 3-5 cm. broad, sharply conic with a spreading margin, conic umbonate in age, surface dry, glabrous, streaked because of innate appressed fibrils (no tendency to form scales noted), margin opaque, color evenly "Prouts brown", pallid flesh at times showing between the fibrils; flesh pallid brown to pallid, odor and taste not distinctive; lamellae moderately close, adnate-seceding, rather narrow and equal, whitish, soon pale pink, edge slightly uneven; stipe 4-10 cm. long, 4-6 mm. thick, equal, hollow, white, glabrous but unpolished and with a few scattered fibrils, fragile, fibrous apex glabrous or minutely pruinose, (appearing glabrous and naked to naked eye).

Spores $8-14\frac{1}{2} \times 6-8 \mu$, angular-elliptic to angular-ovate, some angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, $28-35 \times 9-11 \mu$, content homogeneous; pleurocystidia abundant, $50-90 \times 10-20 \mu$, broadly fusoid with acute apices, content dull yellow in KOH, walls often undulating near apex and in some the tips curved; cheilocystidia similar to pleurocystidia, scattered; gill trama parallel, golden brown as revived in KOH; pileus trama homogeneous beneath a cuticle of appressed hyphae having very dark colored contents (in KOH); no clamp connections seen.

Habit, habitat and distribution: Scattered on humus, Indian Creek, Great Smoky Mts. National Park, N.C., Sept. 5, 1935, Sm.-7424.

Observations: The strict bearing, conic dark brown pileus, white stipe, and large pleurocystidia are distinctive.

Rhodophyllus Sm.--10130

Pileus 3-5.5 cm. broad, conic with an incurved margin, in age expanding to broadly conic or margin spreading and disc with a conic umbo, surface dry and appearing indistinctly fibrillose under a lens, in age ± radially streaked, evenly "mummy brown" when young, paler and near "buffy brown" in age; flesh thin, white, firm, no odor or taste; lamellae white when young, soon pinkish from the spores, subdistant, attached by a tooth but rounded portion almost touching the stipe, broad, edges slightly uneven; stipe 6-9 cm. long, 3-5 mm. thick, equal, strict, tubular, breaking with a snap, flesh white, surface coarsely to merely distinctly longitudinally sulcate-striate, faintly silky fibrillose, base white cottony, apex whitish, lower portion pale grayish.

Spores 8-10 x 6-8 μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-40 x 9-10 μ , content ± globular in many; pleurocystidia present, 45-60 x 10-15 μ , fusoid with long tapered neck ending in an acute apex, content oily-globular fresh, homogeneous in KOH; cheilocystidia similar to pleurocystidia or smaller; gill and pileus trama not reviving well, cuticular cells with dark brown pigment; clamp connections none.

Habit, habitat and distribution: Scattered under hardwoods, Cades Cove, Tenn., Great Smoky Mts. National Park, Aug. 13, 1936, Sm.--10130.

Observations: The dried specimens have a distinctive orange-ochraceous tone at the base of the stipe and over the gills.

Rhodophyllus. Sm-39443 -(albogriseus?).

Pileus 2-4 cm. broad, convex with an incurved margin, expanding to plane or broadly convex, margin often irregular in age, surface dry and silky-fibrillose, pale silvery drab at first but gradually dingier in age, often with concentric depressions or ridges toward margin; flesh watery, drab, (darker than surface), odor and taste strongly farinaceous; lamellae close, broad, bluntly adnate, dull grayish brown (near wood brown) young, vinaceous in age from spores, edges uneven; stipe 4-7 cm. long, $\frac{3}{8}$ -7 mm. thick, terete or compressed, hollow, surface appressed fibrillose like the pileus and concolorous with it, white-cottony at base, dingy when fibrils are rubbed off.

Spores dingy vinaceous in mass, 9-11 x 6.5-8 μ , angular-tuberculate; basidia four-spored, 36-44 x 9-11 μ , content granular when immature; pleurocystidia none seen; cheilocystidia scattered, filamentous or base slightly enlarged, 30-54 x 7-9 μ ; gill trama sub-parallel; pileus trama with a loosely arranged cuticular layer of hyphae 5-8 μ in diameter but otherwise not sharply differentiated from tramal body.

Habit, habitat and distribution: Scattered to gregarious on or around very rotten wood and rich humus, Tahquamenon Falls State Park, August 11, 1952, Sm#39443.

Observations:

Pileus 2-4 cm. broad, obtuse with an incurved margin, expanding to truncate-campanulate or nearly plane, surface dry and appressed fibrillose to squamulose, evenly colored between "cinnamon brown" and "natal brown", margin at times sulcate in age; flesh thin, concolorous with surface, odor and taste not recorded; lamellae narrow to moderately broad, close, bluntly sinuate, edges even, concolorous with pileus but finally vinaceous in age; stipe 7-10 cm. long, 5-9 mm. thick, equal, hollow, fleshy, covered by dark brown fibrils below a brown caulocystidia above and appearing coarsely pruinose to subsquamulose, concolorous with pileus.

Spores 11-16 x 6-8 μ , narrowly angular-elliptic to angular-ovate, hyaline to pinkish in KOH, yellowish in Melzer's solution; basidia 45-54 x 9-12 μ , brownish to hyaline in KOH and many with granular content; pleurocystidia none except for brown collapsed basidia; cheilocystidia scattered (gill edge partly fertile), broadly fusoid to mucronate-pointed, 36-48 x 9-14 μ , hyaline in KOH, gill trama parallel, of narrow dingy brown (in KOH) hyphae; pileus trama colored like gill trama or paler, cuticular hyphae closely arranged, radial, of cells 10-30 μ broad, with dark brown walls in KOH (no mass of hyphal tips and cystidia as in dysthales); clamp connections none.

Habit, habitat, and distribution: Scattered on rich humus or very decayed (pulverized) wood of hardwoods, Chelsea, Mich., Oct. 8, 1932, Sm.-32-547.

Observations: The cheilocystidia differ in shape, color, and abundance from those of R. dysthales and the carpophore is
(more)

much more robust. There is also a distinct difference in the spores.

Rhodophyllus Sm.-29445

Pileus 4.5 cm. broad, obtusely campanulate, surface dry and furfuraceous to squamulose, "Hatal brown" with a vinaceous tinge, drying dark gray; odor and taste none; lamellae close, narrow to moderately broad, "wood brown" then vinaceous, adnate; stipe 6 cm. long, 7 mm. thick, slightly enlarged downward, fibrillose and unpolished pallid, the caulocystidia and fibrils wood brown.

Spores 8-11 (12) x 6-7 μ , angular-elliptic, pink in KOH; basidia four-spored, \pm 40 x 12 μ ; pleurocystidia none; cheilocystidia present, abundant, fusoid with acute to subacute apices, some \pm subcylindric, some with a nipple-like apex; gill trama parallel, \pm wood brown in KOH; pileus trama homogeneous beneath pileocystidia with \pm wood brown content, clavate to submucronate and 50-100 x 12-35 μ , some with a thick-walled apex (cap like); clamp connections present.

Habit, habitat and distribution: Single on humus in mixed woods of cottonwood, alder, hemlock and Douglas fir, Lower Takoma Creek, Mt. Rainier National Park, Wash., July 26, 1948, Sm.-29445.

Observations: This is close to R. griseocyanus but the cheilocystidia differ. Get more if possible.

Rhodophyllus Sm.-34021

Pileus 3-5 cm. broad, with a small umbo and a decurved margin or disc shallowly depressed and margin arched, surface dry, furfuraceous to squamulose, drab; odor and taste not recorded; lamellae subdistant, moderately broad, broadly adnate to subdecurrent, pale gray with darker gray margins; stipe 4-6 cm. long, 5-6 mm. thick, equal or nearly so, ashy gray and longitudinally striate.

Spores 9-11 (12) \times 6-7.5 μ , angular-elliptic, pinkish in KOH; basidia 4-spored, 30-38 \times 9-10 μ ; pleurocystidia none; cheilocystidia scattered, mucronate to ventricose capitate, the capitellum nearly sessile, walls thin, hyaline, 40-55 \times 10-17 μ , (gill edges showing faint color in KOH but this not located in any particular cell); gill trama parallel, pale wood brown in KOH; pileus trama homogeneous beneath a tangled thin layer of colored (brown) hyphae 4-5 μ in diam. with appressed free tips; clamps none.

Habit, habitat and distribution: Two together on sphagnum, Tahquamenon Falls State Park, Mich., Sept. 19, 1949, Sm.-34021.

Observations: The narrow hyphae in a tangled mass over the cap are peculiar. The ends are often cystidioid with a subapical constriction and a slight micro or capitellum.

Rhodophyllus Sm.--11032

Pileus 3-6.5 cm. broad, plane with a strongly inrolled margin, slightly umbonate or disc slightly depressed, surface dry and innately fibrillose under a lens when young, in age the disc glabrous and watery, margin fibrillose, color evenly "light drab" when young and usually with a pinkish tinge near margin, in age "vinaceous buff" except for a dingy watery gray disc at times, usually the surface glistening and ± streaked; flesh thin and very fragile, pallid watery gray, odor and taste strongly farinaceous; lamellae narrow to moderately broad (4-6 mm.), moderately close (30-35 reach stipe), 3-4 tiers of lamellulae, "pale vinaceous fawn" becoming "avellaneous" and finally dingy flesh color from spores, edges eroded and faintly pinkish; stipe 5-10 cm. long, 5-11 mm. thick, equal or enlarged below, white or tinged the color of the mature pileus (grayish vinaceous buff) glabrous except for longitudinal fibrous striations, not pruinose or scurfy at apex.

Spores 8-10 x 5.5-7 μ , angular-elliptic, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-40 x 9-10 μ , content homogeneous; pleurocystidia none, cheilocystidia 36-45 x 8-12 μ , ventricose-capitate (8-12 μ wide in ventricose portion, head 4-8 μ diam., neck 3-4 μ in narrowest part), hyaline in KOH, thin walled; gill trama parallel, hyaline; pileus trama homogeneous, all hyphae with ± radial arrangement except for numerous laticiferous hyphae; clamp connections present at base of basidium.

Habit, habitat and distribution: Scattered on musk, Mud Lake Bog, Whitmore Lake, Mich., Sept. 19, 1938, Sm.-11032.

(more)

Observations: The cheilocystidia relate it to R. griseocyanus--and it may be only a variety of that species.

Rhodophyllus Sm-39199.

Pileus 3-5 cm. broad, broadly convex to nearly plane or with slight umbo, surface dry and minutely squamulose over all, surface "cinnamon drab" (faint vinaceous tinge) or disc darker and browner, margin long remaining incurved; flesh thin, not fragile, pallid, odor slight, taste mild; lamellae pallid grayish but finally dingy vinaceous, close, broad, broadly adnexed to nearly free, edges even; stipe 5-8 cm. long, 4-8 mm. thick, slightly enlarged downward, apex coarsely pruinose punctate and "light brownish drab" from this covering, more appressed fibrillose below and pallid to grayish vinaceous.

Spores 8-10 x 5.5-6 μ , angular-elliptic, vinaceous in mass; basidia 34-40 x 9-10 μ , four-spored, hyaline; pleurocystidia none seen or same as cheilocystidia and close to edge; cheilocystidia fusoid ventricose with acute apices (30-40 x 10-12 μ) or ventricose-capitate as in Conocybe (30-40 x 10-14x7-9 μ), hyaline, thin-walled; gill trama parallel, hyaline; pileus trama homogeneous, squamules made up of aggregations of hyphal tips with vinaceous content; clamp connections present but rare.

Habit, habitat and distribution: Solitary on moist humus under hardwoods, Pellston, Michigan, 7-20-52, A.H.S. 39199.

Observations: The cyaneous tints are striking but the Conocybe-like cheilocystidia are unique.

Pileus 3-5 cm. broad, obtusely conic, expanding to broadly conic, surface dry, appressed fibrillose to squamulose or finely furfuraceous, evenly "drab" or tinged "benzo brown"; flesh dark dingy grayish brown (watery), unchanging, thin, fragile, odor and taste not distinctive; lamellae "drab" (but slightly paler than pileus), finally pinkish, broad and ventricose (6-8 mm.), close to crowded, 3 tiers of lamellulae, edges cerrate; stipe 10-12 cm. long, 4-6 mm. thick at apex, evenly enlarged downward, hollow, fragile, pale gray, paler than pileus or gills, base with appressed whitish mycelium, more or less longitudinally striate.

Spores 8-10 x 5-6 μ , angular-elliptic, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 28-35 x 8-9 μ , content homogeneous; pleurocystidia none seen, cheilocystidia 40-54 x 10-15 μ , ventricose-capitate to \pm fusoid-ventricose with obtuse apices, hyaline, thin-walled; gill trama parallel, brownish to hyaline, subhymenium not distinctive, many laticiferous hyphae present; pileus trama homogeneous beneath a cuticle of \pm decumbent clavate pilocystidia with smoky brown contents, 10-20 μ in diam.; length variable, 40-100+ μ ; clamp connections present.

Habit, habitat, and distribution: Single on side of a stump, Rhododendron, Ore., Oct. 24, 1944, Sm.-20139.

Observations: The capitate cheilocystidia are distinctive in this group of fibrillose dark colored species.

Rhodophyllus Sm.-33694

Pileus 3-6 cm. broad, conic with an incurved margin, expanding to nearly plane but with a low conic umbo, surface dry and furfuraceous-glistening in age streaked as well as furfuraceous, color evenly "dark purple drab" to "dark vinaceous drab", scarcely changing in age; flesh vinaceous gray to watery pallid, odor and taste not distinctive; lamellae near pallid vinaceous gray and becoming "vinaceous drab" finally paler pink from spores, close, adnexed, broad, edges uneven or soon becoming so and pallid at first, when bruised staining darker vinaceous than fascies; stipe 4-7 cm. long, 4-9 mm. at apex, evenly enlarged downward, minutely pruinose scabrous above and concolorous with gills, whitish below and somewhat longitudinally striate.

Spores 7-9 x 5-6 μ , angular-elliptic, with a pronounced suprahilar depression, hyaline in KOH, pale vinaceous in mass; basidia four-spored, 34-40 x 8-9 μ , content homogeneous in KOH; pleurocystidia none seen; cheilocystidia abundant, 36-60 x 10-14 μ , fusoid ventricose to ventricose with narrowed neck and capitate apices, hyaline and thin walled; gill trama parallel, hyaline, cells homogeneous, subhymenium thin and not distinctive; pileus trama homogeneous beneath a turf of semi-decumbent pileocystidia with smoky brown content as revived in KOH; clamp connections present; laticiferous hyphae abundant in gill and pileus trama.

Habit, habitat, and distribution: Scattered under cedar in a swamp, Rees' Bos, Cheboygan County, Mich., Sept. 14, 1949, Sm.-33694.

(More)

Observations: The turf of pilocystidia, ventricose-capitate cheilocystidia, vinaceous drab color and small spores are distinctive.

Rhodophyllus Sm.-32-81

cyaneus Pk.

Pileus 4-8.5 cm. broad, obtusely conic at first, then expanded-umbonate, umbo often rather sharp, surface appressed-fibrillose, becoming furfuraceous to squamulose, "pale lavender violet" to "mauvette" when fresh, fading to "pale vinaceous lilac" and finally "pallid quaker drab", (not hygrophanous), margin even and usually abruptly decurved; flesh \pm 3 mm. thick near umbo, \pm 1 mm. near cap margin, fibrous in consistency; lamellae close, moderately broad (5-8 mm.), slightly ventricose, attached by a decurrent tooth only, edge eroded but not fimbriate, faces at first whitish to pale grayish vinaceous, soon pink; stipe 8-11 cm. long, 8-12 mm. thick at apex, equal or evenly enlarged downward, hollow, beautifully longitudinally fibrous striate to apex, concolorous with pileus and fading like it, in age times almost whitish, no traces of a veil.

Spores 8-10 \times 6-7.5 μ , angular-elliptic, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-36 \times 10-12 μ , content homogeneous to somewhat granular; pleurocystidia none; cheilocystidia fairly numerous, 30-40 \times 9-14 (18) μ , fusoid-ventricose with obtuse to subcapitate apices, hyaline, thin-walled; gill trama parallel, hyaline; pileus trama with loosely arranged narrow (2-4 μ) hyphae \pm radial in arrangement, hyaline in KOH, hyphae intergrading in size with those of tramal body; clamp connections present.

Habit, habitat and distribution: Scattered under balsam and cedar, Wilderness State Park, Mich., June 7, 1932, Sm.-32-81.

Observations:

Ray from same parent

Section Entoloma

Stipe 4 mm. or more thick at apex; pileus glabrous and moist to viscid.

Key to Subsections

1. Stipe violet or blue or bluish at least when young Subsection C (19-21)
1. Stipe some other color 2
2. Taste farinaceous Subsection D, (22-48)
2. Taste not farinaceous (it may be bitter or
± disagreeable in some) Subsection E (49-71)

Subsection C

Key to species

- 1. Pileus dark vinaceous brown 19. R. Sm-3561
- 1. Pileus dark violet to blue 2
 - 2. Taste mild 20. R. nitidus
 - 2. Taste strongly ferinaceous 21. R. Bloxami

Rhodophyllus Sm.-3561

Pileus (1.5) 2.5-6 cm. broad, obtusely and broadly conic, becoming partly expanded and with or without a low obtuse umbo, glabrous, moist, striate on margin or part way to disc before fading, color "bone brown" to umber on disc, "natal brown" toward the paler watery gray-brown margin, edge incurved at first and entire or splitting in age; flesh 2-3 mm. thick or more in the disc, tapered evenly to the margin, watery umber, odor and taste not distinctive; lamellulae narrowly sinuate and attached by a narrow tooth, close, broad, "pallid brownish drab" to "pale vinaceous drab", edge even to somewhat eroded; stipe 4-10 cm. long, 4-8 mm. thick, equal to narrowly fusiform, the above-ground portion at first "deep soft blue violet", slowly fading to dull grayish or violet gray, flesh within also violet, buried portion usually watery white, hollow, appressed silky, fragile.

Spores 5-7 μ , angular-globose, angles obscure, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 20-35 \times 8-9 μ , content homogeneous or nearly so; pleurocystidia none; cheilocystidia none; gill trama subparallel, nearly hyaline in KOH; pileus trama with a poorly defined pellicle of narrow (4-6 μ) non-gelatinous hyphae Tradial in arrangement, tramal body of larger interwoven hyphae and brownish to hyaline in KOH; clamp connections present.

Habit, habitat and distribution: Scattered under pine, Florence, Ore., Nov. 20, 1935, Sm.-3561.

Observations: The dark brown pileus and blue stipe are distinctive.

Rhodophyllus nitidus Quel (Sm.-40003)

Pileus 3-4.5 cm. broad, obtusely conic with a straight margin, expanding to conic-campanulate or conic umbonate with a spreading margin, surface glabrous but dry and not fibrillose, somewhat virgate and on margin the cuticle separated to form distinct fibrils, color "deep slate blue" to near "deep Dutch blue", evenly colored; flesh firm, caesious, odor and taste not distinctive; lamellae pallid to caesious tinged but soon merely grayish-pallid and finally vinaceous from spores, close, broad, ventricose in age, edges becoming eroded; stipe equal, 3-7 mm. thick, fragile and splitting longitudinally, hollow and pallid in cortex, surface glabrous, naked, longitudinally striate from grooves in the cuticle, evenly "Dutch blue" or brighter (usually paler than cap).

Spores angular-globose, 6.5-8 μ or 7-9 \times 6-7.5 μ , nearly hyaline in KOH, pale yellowish in Melzer's sol.; basidia four-spored, 32-40 \times 8-10 μ , with globules in content; pleurocystidia and cheilocystidia none seen; gill trama parallel and hyaline, subhymenium not distinctive; pileus trama homogeneous, cuticular layer of hyphae with blue pigment dissolved in cell content (3% of KOH clears pigment and cells are hyaline); clamp connections present.

Habit, habitat and distribution: Gregarious on moss, Green Lake, Mt. Rainier, National Park, Wash., Sept. 18, 1952, Sm.-40003.

Observations: Be sure to check on history of ardosiacus and nitidus.

Rhodophyllus Sm.-8288

(Bloxami Berk)

Pileus 6-12 (15) cm. broad, broadly convex to plane or margin wavy and lobed (inrolled at first), glabrous, lubricous to subviscid when wet, not hygrophanous, blackish violet on disc, violet with a vinaceous tinge on margin, some "dark heliotrope slate" on disc and "deep quaker drab" over margin; flesh violaceous umber to bluish gray under cuticle, whitish elsewhere, thick and hard, odor and taste very strongly farinaceous; lamellae various shades of bluish gray when young, flesh color in age, close, broad, sinuate; stipe 5-12 cm. long, 1-3 cm. thick at apex, equal or enlarged either way, solid glabrous when moist dull bluish gray, whitish at base, some with glaucous areas near apex, ("deep Varley's gray", "Quaker drab" or "Roods lavender" over central two-thirds).

Spores 7-9 μ , angular-globose, the angles somewhat obscure or only moderately prominent, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-44 x 8-10 μ , content of many somewhat oily-globular; pleurocystidia and cheilocystidia none; gill trama subparallel, brownish to hyaline in KOH, subhymenium hyaline and subgelatinous; pileus trama homogeneous beneath a thin gelatinous pellicle of narrow (2-4 μ) appressed hyphae; clamp connections present.

Habit, habitat, and distribution: Single to scattered in conifer forests, particularly under redwood, Oct. 31, 1937, Crescent City Calif. Sm.-8288.

Observations: The blue pileus and stipe, gelatinous pellicle, and massive size and strong farinaceous odor and taste are distinctive.

Subsection D

Key to Species

1. Spores 5-6 x 4.5-5 μ , obscurely angular; on conifer logs; aspect Collybia-like 22. R. Sm-17534
1. Not as above 2
2. Spores (9) 10-13 x 6-8 μ 3
2. Spores mostly 7-10 μ and angular-globose to angular-subglobose (rarely angular-elliptic) 5
3. Stipe darkening to bister at base in age 23. R. strictius (Sm-38969)
3. Stipe merely \pm wood brown in age 4
4. Spores angular-ovate, the angles not prominent 24. R. Sm-1284
4. Spores angular-nodulose 25. R. Sm-39925
5. Gills dark gray to brown when young 6
5. Gills white to cinereous 11
6. Pileus scurfy when faded, sepia to bister at first; gills the same color. 26. R. Sm-34198
6. Not as above 7
7. Pileus "benzo brown" (violaceous cast present) see Sm-17094 also 27. R. Sm-39179
7. Pileus fuscous, fuliginous to blackish brown 8
8. Cheilocystidia present; stipe eccentric . 28. R. Sm-40902
8. Not as above 9
9. Basal white rhizomorphs numerous 29. R. Sm-32368
9. Not as above 10

10. Lamellae watery gray in buttons but
soon wood brown or darker 30. R. Sm-39420
10. Lamellae "benzo brown" at first, becoming
paler ("cinnamon drab") 31. R. Sm-17094
11. White to gray to fuscous species, some tan to
cinnamon in age 12
11. Tan to yellowish or cinnamon colored at first
(the yellow-brown series) 20
12. Pileus lubricous to subviscid. 13
12. Pileus merely moist when fresh 14
13. Pileus olive brown to gray, 3-8 cm. broad . . 32. R. Sm-39191
13. Pileus bistre to snuff brown, 10-15 cm. . . . 33. R. Sm-8298
13. Pileus pallid to whitish or on the disc
creamy 34. R. prunuloides (Sm-5010 & 39423)
14. Densely caespitose (alpine) 35. R. Sm-30721
14. Scattered to gregarious 15
15. Pileus furfuraceous when faded 36. R. Sm-24568
15. Pileus glabrous faded 16
16. Pileus pale watery gray to watery avellaneous
and fading to whitish or dingy tan; taste
only slightly farinaceous 17
16. Pileus fuliginous to drab; taste strongly
farinaceous 18
17. Odor distinctly fragrant; pileus whitish when
faded 37. R. Sm-39227
17. Odor not as above (slight); pileus pale tan
faded 38. R. Sm-39228

18. Spores 5-6.5 μ in diam. 39. R. Sm-1475
18. Spores 7-8.5 μ in diam. 19
19. Pileus lacking an umbo 40. R. griseus (Sm-956)
19. Pileus umbonate 41. R. Sm-39421; 37127; 6921
20. Pileus 8-12 cm. or more broad 21
20. Pileus 2.5-6 (8) cm. broad 23
21. Pileus with a thin gelatinous pellicle. 33. R. 8298
21. Pileus lacking a distinct pellicle. 22
22. Odor and taste strongly farinaceous.
- . . . 42. R. sinuatus (Sm-5083 & 14509)
22. Odor slight; taste only slightly
farinaceous . 43. R. rhodopolius (Sm-1674; 24352; 31485)
23. Pileus pale yellow and clamp connections absent
(if present see prunuloides). 44. R. Sm-21419
23. Pileus tan or yellow-brown 24
24. Basidia two-spored 45. R. Sm-36967
24. Basidia four-spored 25
25. Odor of raw cucumber 46. R. Sm-17095
25. Odor none or farinaceous 26
26. Gills sinuate 47. R. Sm-19699
26. Gills broadly adnate to subdecurrent. . . 48. R. Sm-24351

Rhodophyllus Sm.-17534

Pileus 2-3.5 cm. broad, convex with an inrolled margin, becoming obtusely umbonate or merely broadly convex, surface moist and with a cartilaginous feel, hoary at first, from a thin grayish coating (possibly air pockets in cuticle), soon "snuff brown" over all, fading to pallid dingy brown very slowly, buttons "Saccardo's umber" or grayer; flesh very thin and very cartilaginous (1.5-2 mm. at stipe), \pm equal, concolorous with surface, odor none, taste faintly farinaceous; lamellae "pale olive buff" becoming "vinaceous buff", broad (1.5 mm.), bluntly adnate and soon receding, close (\pm 35 reach stipe), 3 tiers of lamellae, edges becoming somewhat eroded; stipe 4-5 cm. long, 4-6 mm. thick at apex, equal or very slightly enlarged below, hollow but rigid and very cartilaginous, \pm "pinkish buff" over all but covered with a thin coating of appressed cottony fibrils which soon disappears.

Spores vinaceous in mass, 5-6 \times 4.5-5 μ , subglobose, very obscurely angular, hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 20-25 \times 4.5-6 μ , content homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel or nearly so, cells 8-12 μ diam., subhymenium narrow, of interwoven non-gelatinous hyphae; pileus trama \pm hyaline and homogeneous but hyphae of surface layer giving rise to small pilocystidium-like end cells which are mostly appressed, cells 30-40 \times 9-16 μ , and with dingy (in KOH) content; clamp connections present.

Habit, habitat, and distribution: Gregarious on a mossy conifer log, Mt. Angeles, Olympic National Park, Wash., Oct. 4,

1941, Sm.-17534.

Observations: This species is Collybia-like in its cartilaginous consistency and aspect. The spores are very faintly angular, suggesting that the species is one of the most primitive in the genus. It is entirely possible that a true relationship exists here and that Rhodophyllus as a genus arose from Collybia. In Collybia this probability is heightened by the fact that many species with slightly colored spores are known. Since there are also possible connecting lines between Rhodophyllus and Lyophyllum, as well as Rhodophyllus and Rhodopaxillus, the possibility that Rhodophyllus is a genus with several points of origin is highly probable.

Rhodophyllus Sm-38969 (try R. stricticus)

Pileus 3-7 cm. broad, obtusely conic to conic-campanulate, margin curved in against the gills at first, in age with an obtuse conic umbo and a spreading wavy margin, surface glabrous moist, hygrophanous, color dingy honey color (pale when young, redder in age), at times \pm "snuff brown", fading in streaks to very pale avellaneous or near pinkish buff, margin fading last and when moist faintly translucent striate to conspicuously striate, at times rugulose faded; flesh very thin, pallid or tinged \pm like pileus, very readily splitting longitudinally, odor and taste farinaceous; lamellae close, broad, free or narrowly attached to apex of stipe, pallid becoming dingy flesh color, edges even but in large caps often eroded; stipe 9-14 cm. long, hollow, evenly enlarged downward, very fragile and splitting longitudinally readily, twisted striate and with a pallid sheen from striations, pale dingy honey color at first but gradually darkening to pale bister in age, base mycelioid.

Spores 9-12 x 6-7 μ , angular-tuberculate, dingy pink in H₂O under microscope, with a conspicuous suprahilar depression, basidia four-spored, 30-40 x 10-12 μ ; cheilo- and pleurocystidia none seen; gill trama parallel or nearly so; pileus trama homogeneous, the cuticle a compact region of radial cells with very few binding elements but the hyphae not appreciably larger or smaller in diameter than are those in the remainder of the flesh, clamp connections not seen.

Habit, habitat and distribution: Scattered or in groups of 2-4 under hemlock on humus, Reese's Bob, 6-18-52. Sm-38969.

Observations: The farinaceous odor and taste, long, fragile, stipe with its twisted striations and the pallid honey-color stipe which darkens, and the honey-brown to pale cinnamon brown pileus

Rhodophyllus strictus Pk. Sm.-1284

Pileus 3-8 cm. broad, conic, becoming campanulate or with a conic umbo and spreading margin, some with a subulate umbo, surface glabrous, moist, hygrophanous, pale watery cinnamon to nearly umber brown, striatulate when moist, ~~glabrous~~, when faded "wood brown" to silvery gray; flesh very watery and fragile, easily splitting, odor and taste farinaceous; lamellae close, ventricose and broad, sinuate, becoming free in age, dingy gray becoming dull rose color; stipe 10-16 cm. long, 8-12 mm. thick, evenly enlarged downward, hollow and very fragile, twisted fibrous striate, tinged cinnamon when moist but soon to wood brown to silvery.

Spores 10-13 (14) \times 7-9 μ , angular-ovate to angular-elliptic, the angles not prominent, pink in KOH, ochraceous brown in Melzer's sol.; basidia 36-44 \times 10-12 μ , four-spored, content granular in KOH; pleurocystidia and cheilocystidia none; gill trama parallel, dingy ochraceous in KOH, subhymenium loosely filamentose and hyaline but not gelatinous; pileus trama homogeneous; clamp connections none.

Habit, habitat and distribution: Gregarious on sphagnum, Nichols Bog, Cheboygan County, Mich., June 6, 1935, Sm.-1284.

Observations: This is a long-stiped form of the species. Compare with Peck's type.

Rhodophyllus Sm.-39925

Pileus 3-6 (8) cm. broad, obtusely conic expanding to broadly conic or nearly convex, surface glabrous, moist, hygrophanous, dark grayish brown moist fading to dull cinereous, when moist faintly striatulate; flesh thin and fragile, concolorous with surface, taste farinaceous; lamellae close, broad, ventricose, ascending-adsnate, attached by a line at apex of stipe, gray when young, finally dingy vinaceous; stipe 6-12 cm. long, 3-6 mm. thick, equal, strict, fragile, silvery longitudinally fibrillose-striate, evenly brownish gray at apex.

Spores 8-11 x 6.5-8 μ , angular-nodulose, quadrate in end view, in side view usually with 4 corners (counting apiculus) \pm produced into nodules, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 x 9-12 μ , with globular content; pleurocystidia and cheilocystidia none seen; gill trama parallel, walls of hyphae with brownish walls in KOH, subhymenium, thin, appearing cellular; pileus trama with cuticle of radial hyphae of enlarged cells (as in *Psathyrella*) cells of trama proper slightly narrower, all with brown walls in KOH; no clamp connections seen.

Habit, habitat and distribution: Scattered in mixed forest (swamp) Bear Flats, Mt. Rainier National Park, Wash., Sept. 15, 1952 (Sm.39925)

Observations: The aspect is that of R. strictus but the spores are entirely different.

Rhodophyllus

Sm.-34198

Pileus 3-7 cm. broad, convex-depressed, becoming shallowly vase-shaped, surface moist and hygrophanous but appearing unpolished due to a minute innate scurfiness, somewhat rimose irregularly in age, color "sepia" to "bister" moist and margin obscurely striatulate, fading to dingy grayish brown; flesh concolorous with surface when moist, pallid when faded, odor slight, taste farinaceous; lamellae close, broad, arcuate-adnexed, almost concolorous with moist pileus young, in age with reddish tone from spores, edges eroded; stipe 4-8 cm. long, 5-7 mm. at apex, slightly enlarged downward, hollow and very fragile, dark fuliginous but hoary from a thin coating of fibrils which at first causes it to appear striate, base white-mycelioid.

Spores 8-10 μ , quadrate in end view, angular-globose in side view, apiculus prominent, pinkish in KOH, yellowish in Melzer's sol.; basidia 38-44 \times 9-11 μ , slightly granular in KOH; pleurocystidia and cheilocystidia none seen; gill trama parallel, cells broad and long, not with granular content; pileus trama homogeneous beneath a cuticle of fascicles of long cystidia-like cells with grayish yellow (in H₂O fresh) pigment in cell sap (in KOH it is near snuff brown); the cells 80-150 \times 10-15 μ ; clamp connections present.

- Habit, habitat, and distribution: Subcespitose in sphagnum moss, Mud Lake Bog, Washtenaw County, Mich., Sept. 27, 1949, Sm.-34198.

(more)

Observations: The minute scurfiness of the pileus, sepia to bister color, farinaceous taste, dark colored young lamellae, dark fuliginous stipe with its fibrillose coating, and the more or less quadrate spores, and large pilocystidia with their colored content make this an easily recognized species either in the field or laboratory.

Rhodophyllus Sm-39179

Pileus 2.5-5 cm. broad, obtusely umbonate with an incurved margin expanding to plane or nearly so with an obtuse low umbo, surface glabrous and moist, when young and fresh near "binge brown" (violaceous cast evident) fading variously (disc first in some, margin first in others) to pale drab, or silvery gray (violaceous cast fading in some so that cup is dark watery gray before losing moisture), translucent striate moist; flesh concolor with surface, watery, fragile, odor (crushed) and taste strongly farinaceous; lamellae, horizontal, adnate becoming slightly adnexed, close, moderately broad, ventricose in age, edges uneven, faces when young dingy gray, finally dingy flesh color; stipe 5-6 cm. long (3)4-7 mm. thick at apex, hollow but rather firm and fleshy, surface obscurely longitudinally fibrillose striate to twisted striate in age (pallid whitish, in age) watery gray where fibrils have been removed.

Spores dingy vinaceous in deposit, 7-8.5 x 6-6.5 μ , broadly elliptic in outline, obscurely angular; basidia four-spored, 36-44 x 9-10 μ , when young with granular content but granules not numerous enough to obscure detail; pleuro- and cheilocystidia none seen; gill trama parallel or nearly so; pileus trama homogeneous, cuticular hyphae radially arranged, no conspicuous granulosity noted in any hyphae of trama; no clamp connections seen.

Habit, habitat and distribution: Gregarious on moist soil in 18W woods of maple, Maple River, Cheboygan county, Michigan,

19,1952, Sm-39179.

Observations: When collected fruiting bodies of this species remind one of a dull-colored collection of the Rhodopaxillus nudus series.

Rhodophyllus Sm.-40902

Pileus 4.5 cm. broad, obtusely umbonate with a de-curved margin, glabrous, lubricous, dark fuliginous and scarcely fading; flesh gray, odor and taste farinaceous; lamellae broad, subdistant, depressed-adnate, dark fuligineous becoming hair brown or with more pink (from spores); stipe 2.5 cm. long 6 mm. thick, eccentric, glabrous, concolorous with pileus.

Spores 8-10 ~~5~~ 6-8 μ , broadly angular-elliptic to angular ovate, pink in KOH; basidia four-spored 36-48 \times 9-10 μ , con-
tinet oily-granular; pleurocystidia none; cheilocystidia fu-
soid ventricose and cylindric contorted, the first 30-40 \times
9-11 μ , tapered evenly to obtuse apices, the second 30-40 \times
6-8 μ ; gill trama hyaline, parallel; pileus trama with a sub-
gelatinous cuticle of hyphae 3-4 μ in diam., mostly with
bister content in KOH, beneath this a hypoderm of larger radial
hyphae, the remainder interwoven and filamentous; clamp
connections present.

Habit, habitat and distribution: Under conifers near
Crest Falls, Mt. Rainier National Park, Wash., Oct. 13, 1952,
Sm.-40902.

Observation: This is close to R. lividus but differs
in spores and presence of cheilocystidia.

Rhodophyllus Sm.-32368

Pileus 3-6.5 cm. broad, convex with an inrolled margin, becoming obtusely umbonate, plane, or margin variously up-lifted and wavy, surface glabrous, moist, hygrophanous, dark fuliginous (as in many species of *Lyophyllum*) when moist, fading to "deep olive buff" or grayer, opaque at all times, in age sometimes near "wood brown" before fading; flesh thin, grayish, odor not distinctive, taste distinctly farinaceous; lamellae pale drab becoming avellaneous to fawn color from spores, close broad, depressed-adnate, edges even; stipe 5-8 cm. long, 5-15 mm. at apex, enlarged slightly toward base, pale to dark fuliginous in apex, paler to pallid below, soon hollow, surface silvery to glaucous gray and striate, paler when young, darker in age, white rhizomorphi around the base.

Spores 7-9.5 x 6-8 μ , broadly angular-elliptic to angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 34-40 x 8-10 μ , homogeneous or with only scattered globules; pleurocystidia none; cheilocystidia none; gill trama parallel, dingy pale brown in KOH in thick sections, subhymenium paler but not gelatinous; pileus trama homogeneous beneath a thin hyaline pellicle of narrow non-gelatinous hyphae, tissue beneath dingy brown in KOH; clamp connections present.

Habit, habitat, and distribution: Cespitose-gregarious on humus, Wolf Bog, Cheboygan Co., Mich., June 29, 1949, Sm.-32368.

Observations: This differs in minor characters from 37127, as follows. Rhizomorphi were numerous, the pileus

(more)

was distinctly hygrophanous, the gill and pileus trama were colored in KOH, the gill edges remained even, and the apex of the stipe was merely silky.

The fungus was found growing on the ground in a grassy field, near a stream, in the autumn of 1940. It was collected by the writer and Mr. J. H. Smith. The fruiting bodies were small, gregarious, and somewhat flattened, with a convex to slightly concave pileus. The gills were crowded, narrow, and slightly decurrent. The stipe was short, thick, and slightly flattened. The spores were ellipsoid, with a smooth surface, and measured about 4-5 by 2-3 microns. The basidia were 4-spored. The paraphyses were long, slender, and branched. The fungus was identified as *Boletus edulis* (Fr.) Fr.

Boletus edulis (Fr.) Fr. is a common mushroom, and is often cultivated. It is found growing on the ground in a grassy field, near a stream, in the autumn of 1940.

The fungus was found growing on the ground in a grassy field, near a stream, in the autumn of 1940. It was collected by the writer and Mr. J. H. Smith.

Rhodophyllum Sm 39420.

Pileus 3-5 cm. broad, nearly plane with a bent in margin, expanding to plane or nearly so, rarely with a small obtuse umbo, surface glabrous, moist, polished to watery, translucent striate on margin when moist and margin often lobed or sinuate, color "mummy brown" to fuscous, toward margin grayer at maturity, hygrophanous and dingy cinereous faded, fading on disc first; flesh thin, concolorous with surface, very fragile, odor and taste strongly rancid-ferinaceous (as in Collybia witellina); lamellae close to subdistant, broad and ventricose, depressed adnate, watery gray young, becoming dark wood brown and finally more vinaceous; stipe 3-6 cm. long, 5-9 mm. thick terete to compressed, very fragile, hollowed, surface silvery-gray from thin coating of longitudinal fibrils, darker and \pm concolorous with pileus when fibrils are rubbed off but not true color change on bruising.

Spores vinaceous in deposit, angular-globose to subglobose, 7-9 x 6-8 μ ; basidia four-spored, 22-26 x 8-10 μ ; ~~pleuro- and cheilocystidia~~ pleuro- and cheilocystidia none seen; gill trama parallel, hyphae with brownish walls in H₂O fresh; pileus trama homogeneous, hyphal walls brownish.

Habit, habitat and distribution: Gregarious at edge of manure pile, Pellston Hills, August 10, 1952, Sm-39420.

Observations: It looks like a fragile, dark Lyophyllum

Rhodophyllus Sm.-17094

Pileus 2-3.5 cm. broad, nearly plane with an inrolled margin young, in age plane or the disc slightly depressed, the margin somewhat arched and occasionally with an obsolete umbo, surface glabrous, moist but long remaining opaque, only in age translucent-striate on margin, evenly "fuscous" over all, hygrophanous, fading in streaks to dingy "cinnamon drab"; flesh very thin and fragile, "smoke gray" except for the pellicle, odor and taste very strongly farinaceous; lamellae subdistant, 27-30 reach the stipe, 2 tiers of lamellulae, bluntly adnate and developing a tooth, sometimes subdecurrent in buttons, frequently short-decurrent in age, moderately broad (\pm 5 mm.), tapering to cap margin, "benzo brown" becoming "cinnamon drab" (dark brownish,) edges even; stipe short, 2.5-3.5 cm. long, 3-6 mm. thick, hollow, equal or enlarged either way, "drab" over all, surface glabrous but cuticle soon splitting longitudinally causing long striations, readily splitting lengthwise when broken.

Spores 8-10 \times 6-7 μ , broadly angular-elliptic, pink in KOH, yellowish in Melzer's sol.; basidia four-spored 34-40 \times 9-10 μ , ventricose below apex, content mostly homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel or nearly so, hyaline to brownish in KOH, subhymenium interwoven but not gelatinous; pileus trama homogeneous and hyaline beneath a pellicle of narrow (3-6 μ) hyphae radially arranged, appressed and filled with dark brown pigment (revived in KOH); clamp connections present.

(more)

Sm.-17094

Habit, habitat and distribution: Gregarious on poor soil, Mt. Angeles, Olympic Mts., Wash., Sept. 21, 1941, Sm.-17094.

Observations: The structure of the cuticle is of the old "Entoloma" series rather than "Leptonia". The colors are all toned with violet yet that color is not a dominant feature as in the R. lampropoda series.

Rhodophyllus Sm-39191

Pileus 3-7.5 cm. broad, obtuse with an incurved margin, expanding to plane or obsolete umbonate, in age margin spreading and wavy, surface glabrous, lubricous to subviscid moist, hygrophanous but opaque when moist, dark fuliginous to "buffy brown", disc darker than margin, fading to dingy gray-brown, flesh concolor with surface, watery moist, dingy pallid faded, odor and taste distinctly farinaceous; lamellae pallid gray becoming pallid and then flesh color, close, broad, depressed-adnate to adnexed, ventricose in age, edges becoming uneven; stipe short, 2-4 cm. long, 8-15 mm. thick equal or nearly so, fleshy, stuffed, watery gray with whitish streaks fibrillose from lacerated cuticle, otherwise naked.

Spores 8-9 x 7-8 μ , angular-subglobose; basidia four-spored, 36-40 x 10-12 μ , content somewhat granular; pleurocystidia and cheilocystidia none seen; gill trama somewhat interwoven, hyaline, no granules; pileus trama homogeneous beneath a thin gelatinous pellicle of narrow (\pm 7-10 μ) hyphae with brownish content; no clamp connections seen.

Habit, habitat and distribution: Gregarious under hardwoods, Pellston, Michigan, 7-20-52. A.H.S.-39191.

Observations: This is very close to R. lividus and may be only a form of that species. It is darker and more viscid than most collections I have referred there.

Rhodophyllus Sm.-8298 (lividus f. major)

Pileus (5) 10-15 cm. broad, obtusely conic to merely obtuse, becoming either plane or umbonate, margin often creased to crenulate and often with one or more sinuses (in general quite irregular), glabrous, often with coescent streaks around umbo and at times appearing matted-fibrillose (under a lens) around the disc, not hygrophanous, color "bister" to "snuff brown", "buffy brown" or more of an olive-gray, with a hard, cartilaginous feel and viscid when wet, often merely lubricous, pellicle very thin but somewhat separable; flesh † "bister" near cuticle, white otherwise, firm, cartilaginous near surface, odor and taste distinctly farinaceous; lamellae broad, close to subdistant, sinuate, pallid grayish young, flesh color at maturity; stipe 6-12 cm. long, 2-4 cm. thick, equal, sometimes enlarged either at base or apex, pallid gray († concolorous with young gills), hollow, usually pruinose-scurfy near apex, sparsely fibrillose to † scaly below from broken cuticle.

Spores 8-10 μ , angular-globose, pink in KOH, yellowish in iodine; basidia four-spored, 38-44 \times 10-12 μ , content oily-granular in many; pleurocystidia and cheilocystidia none; gill trama parallel, brownish in KOH, subhymenium hyaline and subgelatinous; pileus trama homogeneous beneath a thin gelatinous pellicle of narrow hyphae with yellow-brown content; clamp connections present.

Habit, habitat, and distribution: Gregarious under redwoods, Mill Creek Grove, Crescent City, Calif., Nov. 11, 1937, SM.-8298.

Observations: A robust form of the species.

Rhodophyllus Sm.-5010. *prunuloides*

Pileus 6-12 cm. broad, obtuse margin incurved, expanding to plane or slightly umbonate, margin usually decurved, but at times uplifted and wavy, surface uneven, glabrous, lubricous to slightly viscid at first, opaque, very pale grayish white, not hygrophanous, becoming whitish with a faint yellowish tinge on disc; flesh, thick on disc, tapering slowly, firm, odor and taste farinaceous; lamellae close, broad, sinuate, creamy white becoming slowly flesh color, edge eroded; stipe 10-12 cm. long, 10-12 mm. thick, equal, solid, white, fleshy and firm, apex pruinose, below faintly appressed silky to longitudinally striate.

Spores 7-9 (10) μ , angular-globose, pink in KOH, yellowish in Melser's sol.; basidia two-and four-spored, 36-44 \times 10-13 μ , content granular in KOH; pleurocystidia none; cheilocystidia none; gill trama subparallel, grading into the subhymenium, hyaline in KOH; pileus trama with narrow hyphae over surface which are subgelatinous in KOH, grading evenly into broader hyphae of tramal body (hence no true pellicle), hyaline in KOH throughout; clamp connections present.

Habit, habitat and distribution: Single to gregarious in hardwood forests, late summer and fall, Ann Arbor, Oct. 3, 1956, Sm.-5010.

Observations: The viscidility is present only during wet or humid weather.

Rhodophyllus Sm-39423 (*prunuloides*).

Pileus 4-10(12) cm. broad, obtuse with a curved in margin, becoming convex to expanded-umbonate, margin becoming wavy and often sinuate, surface glabrous, moist, hygrophanous, watery-cream color to more yellowish fresh, whitish faded, margin opaque at all times; flesh thick in disc, thin over margin, whitish, odor pungent to aromatic, taste distinctly farinaceous; lamellae close, broad, depressed-adnate, to adnexed, white becoming pink from spores edges becoming eroded; stipe 6-12 cm. long, 10-25 mm. thick, equal or nearly so, fibrous, firm, whitish, glabrous and naked, in age scaly at times from breaking of cuticle.

Spores 7-9(10) x 6-8 μ , angular-subglobose to broadly angular-elliptic; basidia four-spored, 40-50 x 10-12 μ , content granular young; pleuro-and cheilocystidia none seen; gill trama parallel; pileus trama homogeneous or nearly so.

Habit, habitat and distribution: Gregarious under hardwoods, Pellston Hills, August 10, 1952. Sm-39423.

Observations:

Rhodophyllus Sm.-30721

Pileus 3-6 cm. broad, convex to obtuse young, the margin incurved, expanding to obtusely umbonate or nearly plane, the margin wavy and frequently split, surface glabrous, moist and hygrophanous, "bister" varying toward fuliginous, fading to sordid ash color (as in many species of *Lyophyllum*), when moist the margin opaque or only faintly translucent striate; flesh thin, concolorous with surface moist, pallid faded, very fragile, odor and taste strongly farinaceous; lamellae broad and ventricose, deeply adnexed and with a decurrent tooth, seceding, moderately close, pale gray fresh, gradually flesh colored, edges even to eroded; stipe 4-8 cm. long, 5-10 mm. thick, hollow, fragile, tissue lining the cavity whitish, cortex grayish, surface silvery striate from fine appressed fibrils, glabrescent, apex naked and concolorous with pileus.

Spores 8-10 x 6-8 μ , broadly angular-elliptic, the angles produced almost to nodules in many, with a broad suprahilar depression, pale pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored 28-36 x 8-10 μ , some with finely globular content before sporulating; pleurocystidia none; cheilocystidia none; gill trama parallel, hyaline, subhymenium not distinctive; pileus trama homogeneous; clamp connections present.

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Sm.-30721

Habit, habitat, and distribution: Cespitose under Abies lasiocarpa, Reflection Lake, Mt. Rainier National Park, Wash., Aug. 28, 1943. Sm.-30721.

Observations: The aspect, in the field, is that of a cespitose Lyophyllum. The farinaceous odor and taste are very pronounced.

Rhodophyllus Sm.-24568

Pileus 3-4 cm. broad, disc slightly depressed, margin arched and striatulate, hygrophanous, watery drab moist, fading to pale grayish in streaks, becoming furfuraceous when faded; flesh thin, concolorous with surface, fragile, odor and taste somewhat farinaceous; lamellae broad (5-7 mm.) broadly adnate becoming short--decurrent, subdistant (2-3 tiers of lamellulae), evenly pallid grayish (a shade darker than "tilleul buff") before colored by spores, edges becoming eroded; stipe 5-6 cm. long, 4-6 mm. at apex, narrowed downward, hollow, fragile, glabrous, moist, pallid grayish--paler than cap, darker than gills.

Spores 8-10 x 7-8.5 μ , broadly angular-elliptic to angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 34-40 x 8-10 μ , content $\frac{1}{2}$ glo-
bular in many; pleurocystidia none; cheilocystidia none; gill trama parallel, hyaline or nearly so, subhymenium not distinctive; pileus trama homogeneous, dull brownish in KOH, no pileocystidia present on sections examined (material all mature); clamp connections present.

Habit, habitat and distribution: Gregarious on humus in alder-maple forest, Rhododendron, Ore.; Oct. 14, 1946, Sm.-24568.

Observations: The aspect of this species is that of a small *Tricholomopsis platyphylla*. In spite of the faded cap being furfuraceous, no pileocystidia were found. However, these are best demonstrated on young caps and none in early stages of development were available for examination.

Rhodophyllus Sm 39227

Pileus 3-8 cm. broad, obtuse to convex with an inrolled margin, expanding to plane on disc with margin wavy and elevated, surface glabrous, moist, hygrophanous, margin translucent striate at first, color watery avellaneous fading to whitish; flesh thin and fragile, odor distinctly fragrant, taste slightly farinaceous; lamellae adnexed narrow to moderately broad, whitish becoming pinkish vinaceous, edges becoming eroded; stipe 5-8 cm. long, 9-12 mm. at apex, evenly enlarged downward, stuffed, fragile pith pallid but yellowish stained where wormy, surface shining white and appressed fibrillose from fibrils of cuticle or these loosening to form squamules or recurved scales, usually more lacerate in upper half.

Spores vinaceous in deposit, $7-8 \times 6-7.5 \mu$, angular-subglobose; basidia $30-35 \times 9-10 \mu$, four-spored, content somewhat granular; pleurocystidia none; cheilocystidia none; gill trama subparallel, cell contents homogeneous; pileus trama hyaline and homogeneous, the hyphae of cuticular region radial and more compact than in tramal body; clamp connections present.

Habit, habitat and distribution: Gregarious in upland aspen woods, U.M.B.S. July 21, 1952. Sm 39227.

Observations: This is in the "speculum" group of Entoloma in the Friesian system. The pink of the gills shows through the moist cap at maturity giving a vinaceous flush to the original watery avellaneous color.

Rhodophyllus Sm 39228

Pileus 3-6 cm. broad, obtuse with an inrolled margin, expanding to plane or obsolete umbonate, surface glabrous, moist, hygrophanous, watery gray with a fuliginous disc when young, becoming pale cinnamon brown as spores mature, the disc usually darker (close to "cinnamon brown"), margin translucent striate, fading to dingy tan and in age margin only slightly wavy; flesh concolorous with surface, odor slight, taste mild or faintly ferinaceous; lamellae grayish young, soon pallid and finally vinaceous from spores, close, moderately broad, broadly adnate becoming shallowly adnexed, edges uneven; stipe 3-6 cm. long, 4-8 mm. thick, equal or slightly enlarged downward, hollow, grayish to pallid, surface long-fibrillose striate to silky, not discoloring appreciably, base with white rhizomorphs.

Spores 7-9 x 6-7 μ , angular-elliptic; basidia four-spored, 28-36 x 9-10 μ , content granular; pleurocystidia and cheilocystidia none seen; gill trama subparallel, cell content hyaline; pileus trama homogeneous, hyaline, cuticular region of radial, compactly arranged hyphae; clamp connections present but inconspicuous.

Habit, habitat and distribution: Gregarious and common in open upland hardwoods, U.M.B.S., 7-21-52, Sm 39228.

Observations: This is a small to medium gray "Entoloma" which becomes brown as spores mature.

Rhodophyllus Sm.-1475

Pileus 2-4 cm. broad, broadly umbonate with a somewhat incurved margin when young, becoming expanded and plane except for the abrupt low umbo, glabrous, hygrophanous, "fuscous" to "fuscous black" on umbo, near "olive brown" on margin, striatulate when moist, when faded dull grayish brown and \bar{I} concolorous with stipe, somewhat silky under a lens, undulating on margin in age, often rugulose around umbo; odor and taste farinaceous; lamellae moderately close to subdistant, shallowly adnexed, in age attached by a tooth, moderately broad, gray at first, becoming dull flesh color, in age somewhat eroded; stipe 3-5 cm. long, 4-7 mm. thick, dull gray, paler than the pileus, innately silky, also fibrous striate, hollow, white cottony at base.

Spores 7-9 \times 5-6.5 μ , angular-elliptic, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 35-40 \times 10-11 μ , content somewhat granular in KOH; pleurocystidia and cheilocystidia none; gill trama parallel, the hyphae narrow (4-7-11 μ), subhymenium not distinctive; pileus trama \bar{I} homogeneous but surface region brownish in KOH and surface hyphae subgelatinous in KOH, hyphae of surface region 4-12 μ in diam.; radial and appressed; clamp connections present.

Habit, habitat and distribution: Scattered on humus, near Stockbridge, Mich., July 5, 1935, Sm.-1475.

Observations: The dark colored carpophore, odor and taste and angular-elliptic spores are distinctive.

Rhodophyllus griseus (Pk.) Sm.-956

Pileus 3-9 cm. broad, convex, plane, or depressed, not at all umbonate, glabrous, fuliginous on disc, watery gray (paler) over margin, faintly striatulate, hygrophanous, fading to a dull cinereous, margin becoming wavy in age; flesh thin, watery gray, when crushed the odor farinaceous, taste strongly farinaceous; lamellae 7-9 mm. broad, \pm equal, adnate to sinuate, close, pale gray (young), dingy flesh color in age, edges eroded; stipe 4-9 cm. long, 6-17 mm. thick, equal occasionally somewhat rooting and attenuated, solid but hollowed in age, longitudinally fibrous striate, pale grayish white.

Spores 8-10 \times 7-8.5 μ , broadly angular-elliptic and the angles obscure, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 32-44 \times 10-12 μ , content \pm oily-granular; pleurocystidia and cheilocystidia none; gill trama subparallel, dingy ochraceous in KOH, subhymenium hyaline but not gelatinous; pileus trama homogeneous, surface hyphae radial, appressed, clamp connections present.

Habit, habitat and distribution: Gregarious in mixed woods, Warrensburg, N. Y., Sept. 17, 1934, Sm.-956.

Observations: The broad, obscurely angled spored, farinaceous taste and gray colors are distinctive.

Rhodophyllus Sm.-6921

Pileus 3-7 cm. broad, slightly umbonate to plane and the margin usually decurved, glabrous, appearing appressed innately fibrillose under a lens and somewhat virgate to the naked eye, subhygrophanous, at times with one to several watery zones near the disc, pale fuliginous to dingy cinereous; flesh grayish, fragile, odor none, taste farinaceous; lamellae broadly sinuate, moderately close, broad, "tilloul buff" when fresh, dull pinkish in age, edge eroded; stipe 4-10 cm. long, 6-10 mm. thick, equal or tapering downward, solid or somewhat hollowed, longitudinally appressed-fibrillose striate, apex slightly scurfy, pale grayish white.

Spores 7-9 x 6-8 μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia 34-40 x 9-10 μ , four-spored, content \pm granular; pleurocystidia none; cheilocystidia present only as basidioles (usually narrower than basidia); gill trama parallel, hyaline to brownish in KOH; pileus trama homogeneous, hyphae of cuticular region 4-12 μ in diam. and with brownish walls revived in KOH; clamp connections present.

Habit, habitat and distribution: Gregarious in oak woods, Milford, Mich., Aug. 10, 1937, Sm.-6921.

Observations: This species belongs in the R. lividus group and is distinct from lividus by the virgate pileus and lack of a pellicle on the pileus.

Rhodophyllus

Sm.-37127

Pileus 3-7 cm. broad, obtuse when young, expanding to obtusely umbonate with a spreading margin, surface virgate, "drab" with a paler margin, with whitish streaks along the margin, scarcely changing, not hygrophanous, margin even to wavy; flesh pale grayish, watery punctate, taste and odor farinaceous, no color change when bruised; lamellae pallid gray becoming dingy incarnate, adnexed, broad, close, edges even at first but coarsely eroded in age; stipe 4-8 cm. long, 8-14 mm. thick, equal or nearly so, solid, pallid within, silvery gray and longitudinally streaked, apex grayish fibrillose-pruinose, no color change on bruising.

Spores 7-9 x 6-7.5 μ , broadly angular-elliptic to angular-subglobose, faintly pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 34-40 x 9-11 μ , some with refractive granules (droplets?); pleurocystidia and cheilocystidia none seen; gill trama parallel, subhymenium well developed but not otherwise distinctive; pileus homogeneous beneath a poorly formed (thin) pellicle of narrow, non-gelatinous hyphae; clamp connections present.

Habit, habitat and distribution: Gregarious in mixed woods, Burt Lake, Mich., Aug. 27, 1951, Sm.-37127.

Observations: This is near R. lividus.

Rhodophyllus Sm-39421

Pileus 3-6 cm. broad, obtusely conic with an incurved margin, becoming expanded-umbonate, margin at times recurved and wavy, frequently splitting, surface glabrous, moist, hygrophanous but not translucent striate, dark fuliginous to buffy brown, sometimes watery gray at least over marginal area, fading over disc first (or around it) to grayish avellaneous series; flesh pallid, fragile, odor and taste strongly farinaceous; lamellae adnate to adnexed, pallid watery gray but soon whitish, finally pink from spores, narrow to moderately broad, edges soon eroded; stipe 6-12 cm. long, 10-15 mm. thick, equal to tapered downward, hollow, whitish, fibrillose striate to furfuraceous or nearly silky.

Spores 7-9 x 6-7.5 μ , angular-elliptic to angular-subglobose; basidia four-spored, 36-42 x 10-11 μ , content granular when immature; pleuro- and cheilocystidia none seen; gill trama hyaline, parallel or nearly so; pileus trama homogeneous.

Habit, habitat and distribution: Gregarious in second-growth maple, Pelletton Hills, August 10, 1952, A.H.S. 39421.

Observations: The strong odor and taste and paler stipe and gills are the characters that separate it from Sm-39228. From Sm 39191 it can be distinguished by lack of a thin gelatinous pellicle.

Rhodophyllus sinuatus Fr. Sm.-5083

Pileus 5-12 cm. broad, convex or with a slight umbo, soon plane or with an elevated wavy margin, glabrous, "Sayal brown" to watery cinnamon brown, subhygrophanous, fading to "pale ochraceous buff" or dingy grayish brown, the disc at times with a smoky tinge, margin slightly striatulate at times, disc at times with a fuscous cast; flesh very thin except in the disc, watery brown fading to white, odor and taste strongly farinaceous; lamellae broad (10-18 mm.), oval to ventricose, close to subdistant, more or less sharply adnexed, pallid grayish young, bright flesh color in age, becoming eroded on edges; stipe 4-10 cm. long, 1-2.5 cm. thick at apex, attenuated toward base, solid, shining white and fibrillose from the separation of the hyphae of the cuticle.

Spores 7-9 (10 x 8) μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-44 x 10-12 μ , content mostly homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel, subhymenium not distinctive; pileus trama hyaline and homogeneous; no differentiated pellicle; clamp connections present.

Habit, habitat, and distribution: Caespitose-gregarious in grassy woods, Saginaw Forest, Ann Arbor, Mich., Oct. 8, 1936, Sm. -5083.

Observations: This differs from *R. lividus* in lacking a differentiated pellicle and in the brown color of the pileus. When covered by leaves the pilei become yellowish white in age.

Rhodophyllus Sm.-14509

Pileus 6-12 cm. broad, obtuse with an inrolled margin, becoming plane or elevated and often wavy or lobed, surface lubricous (but pellicle not separable), glabrous, hygrophanous, when real young "mummy brown" on disc and "Dresden brown" on margin, becoming "cinnamon brown" to "buckthorn brown" over all, fading in streaks to dingy "cinnamon buff"; flesh watery grayish, thin, sissile, odor and taste strongly farinaceous; lamellae close (\pm 50 reach stipe), 3-4 tiers of lamellulae, broad (up to 13 mm.), broadest at base and tapering to cap margin, sharply adnexed, "pale olive buff" young, dingy pinkish in age, edges very eroded in age; stipe 8-15 cm. long, 1-2 cm. thick at apex, \pm equal downward to a subrooting base, white, stuffed, glabrous or scaly in age from the broken cuticle.

Spores 7-9 \times 6-7.5 μ , angular-subglobose, pale pink in KOH, in Melzer's sol. pale yellow; basidia four-spored, 35-40 \times 8-10 μ , content homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel, yellowish in KOH, subhymenium hyaline and somewhat glassy in KOH; pileus trama homogeneous beneath a thin hyaline subgelatinous (in KOH) pellicle of narrow hyphae (3-4 μ); clamp connections present.

Habit, habitat and distribution: Gregarious on soil Crescent Beach, near Joyce, Wash., June 21, 1939, Sm.-14509.

Observations: This fungus should be carefully compared with R. lividus and R. sinuatus.

Rhodophyllus rhodopolius Sm.-1674

Pileus 4-11 cm. broad, obtusely conic at first, becoming plane or with a conic umbo, glabrous, hygrophanous, watery tan and striatulate moist, near cinnamon-buff and clay color faded, with a slight pellicle, surface with a cartilaginous feel, margin becoming wavy; flesh thin, pallid odor and taste slightly farinaceous. Lamellae grayish white, bright flesh color in age, moderately broad, sinuate, nearly sub-distant, edge eroded; stipe 6-8 cm. long, 1-2 cm. thick, equal or nearly so, pure white, glabrous, apex faintly powdered, solid, with a tendency to split lengthwise because of a subcartilaginous cortex, in age milky appressed fibrillose (fibrils formed by separation of cuticle).

Spores 7-9 (10) \times 6-7.5 μ angular-globose to angular-subglobose (a few broadly angular-elliptic), pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 32-40 \times 9-10 μ , some with granular content; pleurocystidia and cheilocystidia none; gill trama parallel, hyaline, subhymenium subgelatinous; pileus trama hyaline, homogeneous, cuticular region compact but of radial hyphae of various diameters, clamp connections present.

Habit, habitat, and distribution: Gregarious in open oak woods, Ann Arbor, Mich., July 28, 1935, Sm.-1674

Observations: The carpophores are more delicate in appearance than those of R. lividus and the fresh pileus more watery in appearance.

Pileus 8-12 cm. broad, obtuse with an incurved margin, expanding to broadly convex to nearly plane or with a slight umbo, surface glabrous and moist, "snuff Brown" to "bister", margin paler and opaque to very faintly translucent-striate, fading to yellowish gray, variously streaked from the disc out when fading; flesh thin, fragile, sissile, concolorous with surface both when moist and faded, odor none to faintly disagreeable (as in Clitocybe nebularis), taste mild to slightly farinaceous; lamellae broadly adnexed to adnate, often seceding, close to subdistant, broad (\pm 1 cm.), "tilleul buff" to gray at first, soon pinkish, very fragile and soon broken transversely, edges soon eroded; stipe 8-12 cm. long, 1-2.5 cm. thick at apex, equal to narrowly clavate, hollow, fibrous, pallid throughout, surface fibrillose-striate from splitting cuticle or becoming scaly from lacerated cuticle.

Spores 7-9 x 6-8 μ , in face view angular-subglobose, in side view with an oblique apiculus and broad suprahilar depression, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 38-44 x 8-10 μ , clavate, content homogeneous in KOH and Melzer's sol.; pleurocystidia none seen; cheilocystidia none; gill trama parallel, subhymenium not distinctive; pileus trama with a thin pellicle of subgelatinous narrow hyphae grading into the trama proper, hypodermial region somewhat colored (revived in KOH); clamp connections present.

(more)

Habit, habitat, and distribution: Gregarious in mixed woods, Lower Takoma Creek, Mt. Rainier National Park, Wash., Sept. 20, 1948, Sm.-31485.

Observations:

The birds were seen in a mixed forest of spruce, fir, and deciduous trees. They were very active and noisy, especially in the morning. They were seen in small groups of 2-4 birds. They were very tame and allowed the observer to approach within 10-20 feet. They were very vocal and made a variety of sounds, including a high-pitched whistle, a series of short notes, and a long, low, moaning sound. They were very active and noisy, especially in the morning. They were seen in small groups of 2-4 birds. They were very tame and allowed the observer to approach within 10-20 feet. They were very vocal and made a variety of sounds, including a high-pitched whistle, a series of short notes, and a long, low, moaning sound.

Pileus 8-15 cm. broad, obtuse when young, expanding to plano-umbonate or umbo obsolete, margin raised slightly in age, surface glabrous and moist, hoary at first and usually remaining so until fading, "buckthorn brown" or a little darker, margin faintly striatulate, hygrophanous and fading in streaks to near "clay color" or "cinnamon buff"; flesh thick in the disc but thin away from umbo, sessile, pallid (color of surface located in cuticle), odor and taste farinaceous; lamellae close, broad, \pm equal, bluntly adnate young, becoming adnexed, pallid ("tulleul buff"), finally flesh color from spores, edges conspicuously serrulate; stipe 10-20 cm. long, 1-2.5 cm. thick, equal or nearly so, often tapered slightly at base, becoming hollow, whitish and unchanging, cuticle splitting longitudinally to give a grooved to striate appearance.

- Spores 8-10 \times 6-8 μ , angular-subglobose, the corners rather sharp, pale pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 35-40 \times 9-11 μ , mostly with homogeneous content; pleurocystidia and cheilocystidia none seen; gill trama hyaline to brownish (thick sections) in KOH, subhymenium thin, hyaline; pileus trama with a thick hyaline (in KOH) nongelatinous pellicle of hyphae of various diam. beneath it the tramal body dingy brown (in KOH); clamp connections present.

Habit, habitat and distribution: Gregarious on moss along a trail, Salmon River, Mt. Hood National Forest, Ore., Oct. 10, 1946, Sm.-24352.

(more)

Observations: The large size, brown pileus, far-
inaceous taste, pallid gills and stipe, and rather sharply
angled spores are distinctive.

Notes: Collected and identified by [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

Pileus 3-5 cm. broad (all young) broadly conic to obtusely umbonate and with an inrolled margin when young, expanding to plane-umbonate or with the margin arched slightly and the area around the umbo slightly depressed, the margin long remaining decurved and incurved, surface glabrous and moist somewhat translucent but margin not translucent striate, margin often wavy or lobed, color "chamois" to "deep colonial buff", often with a raw umber cast, the color variable but in yellow series; flesh firm, whitish, odor farinaceous, taste mild to farinaceous; lamellae subdistant, 3 tiers of lamellulae, broadly adnate to subdecurrent, moderately broad, pallid to whitish, finally tinged flesh color, edges usually eroded; stipe 6-8 cm. long, 8-12 mm. diam. at apex, soon hollow, surface coarsely longitudinally fibrillose-striate, in some becoming lacerate scaly, pallid grayish or developing a pale umber cast.

Spores 7-9 x 6-8 μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-40 x 8-10 μ , content typically homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel, of narrow hyphae, hyaline to brownish in KOH, subhymenium hyaline to "glassy", thin; pileus trama homogeneous beneath a pellicle of narrow (3-5 μ) gelatinous (in KOH) hyphae with smoky brown content; clamp connections absent.

Habit, habitat and distribution: Gregarious under berry bushes (Rubus sp.) in an oak woods, Ann Arbor, Mich. May 20, 1946, Sm.-21419.

(more)

Sm.-21419

Observations: The lack of clamp connections, sub-decurrent gills, dull yellow to yellow pilous, and farinaceous odor are distinctive along with the vernal fruiting period.

Spores 2-3 x 1-2, elliptical-oval, with a thick, yellowish wall, a small, dark, central spot, and a small, dark, central spot. The spores are often arranged in pairs or groups of four. The spores are often arranged in pairs or groups of four. The spores are often arranged in pairs or groups of four.

Basidia 2-3 x 1-2, elliptical-oval, with a thick, yellowish wall, a small, dark, central spot, and a small, dark, central spot. The basidia are often arranged in pairs or groups of four. The basidia are often arranged in pairs or groups of four.

Rhodophyllus Sm.-36967

Pileus (2.5) 3-6 cm. broad, obtuse, surface glabrous, moist, hygrophanous, watery cinnamon tan moist, margin opaque, fading (on disc first) to grayish; flesh thin, grayish, odor and taste farinaceous; lamellae pallid "olive buff" soon pinkish, close, broad, adnexed, nearly free at times; stipe 4-8 cm. long, 5-9 mm. thick, equal, hollow, fibrous, glabrous, whitish, unchanging, longitudinally striate.

Spores 7-9 x 6-8 μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia two-spored, the sterigmata frequently proliferating, 30-35 x 9-10 μ , content homogeneous; pleurocytidia and cheilocystidia none; gill trama parallel, hyaline or nearly so; pileus trama homogeneous beneath a subgelatinous cuticular layer of hyaline hyphae, mostly 3-4 μ in diam. but some larger also present (especially toward interior); clamp connections present.

Habit, habitat and distribution: Gregarious at edge of swamp under alder, Lower Falls, Tahquamenon Falls State Park, Mich., July 16, 1951, Sm.-36967.

Observations: Near clypeatus.

Rhodophyllus Sm.-17095

Pileus 4-8 cm. broad, obtuse when young and with an inrolled margin, becoming broadly umbonate with a decurved margin, glabrous, not hygrophanous (or very slightly so) in age often irregular in outline and often sinuate, surface smooth, becoming radially wrinkled, opaque (not striate), color evenly "snuff brown" to "sepia" or margin a paler yellow brown, pellicle not separable; flesh thick on the disc and tapered abruptly, rather cartilaginous-pliant, pale watery avellaneous, odor distinct and reminding one of raw cucumber, taste mild or faintly farinaceous; lamellae moderately close (52-68 reach the stipe), 3 tiers of lamellulae, deeply and sharply sinuate (appearing almost free), moderately broad (8-7 mm.) tapered to cap margin, pallid ("tilleul buff") becoming dull flesh colored, edges eroded; stipe 4-8 cm. long, 10-20 mm. at apex, ⁺ clavate to subbulbous, becoming nearly equal at times, hollow, fragile, whitish within, surface whitish and glabrous but unpolished, cuticle often lacerating to form scales.

Spores 7-9 x 6-8 μ , angular-subglobose, nearly hyaline in KOH, yellowish in iodine; basidia four-spored, 36-43 x 9-10 μ , content homogeneous; pleurocystidia none; cheilocystidia none; gill trama hyaline, parallel, subhymenium not distinctive; pileus trama with a thick surface region of hyaline radial hyphae of various widths, beneath this a colored (dingy brownish) hypodermal zone and removed of flesh ⁺ hyaline, clamp connections present.

(more)

Sm.-17095

Habit, habitat and distribution: Gregarious in a trail, Mt. Angles, Olympic National Park, Wash., Sept. 21, 1941, H. V. & A. H. Smith.-17095.

Observations: This is very close if not identical with R. sinuatus.

Rhodophyllus Sm.-19699

Pileus 4-8 cm. broad, obtuse becoming obtusely umbonate, the margin spreading or uplifted and then frequently wavy or lobed or both, surface glabrous, moist, hygrophanous, evenly "blackthorn brown" or a paler shade, some darker and near "cinnamon brown", fading to dingy cinnamon buff, margin when moist faintly translucent-striate, surface with a cartilaginous feel but pellicle not separable; flesh pallid watery grayish brown, fading to pallid, odor and taste slightly farinaceous; lamellae pallid when young, pinkish at maturity, broad (10-12 mm.), sinuate, moderately close, 2 tiers of lamellulae, edges even at first but soon eroded; stipe 10-15 cm. long, 10-15 mm. thick at apex, equal or slightly enlarged downward, solid, white to pallid, (dull whitish), perfectly glabrous and naked to apex, cuticle sometimes splitting to cause fine longitudinal striations.

Spores 8-10 \times 6-8 μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored 36-44 \times 10-12 μ , homogeneous in KOH; pleurocystidia none; cheilocystidia none seen; gill trama parallel, brownish to hyaline, subhymenium hyaline, thin, not distinctive; pileus trama homogeneous beneath a poorly organized non-gelatinous pellicle of narrow (3-4 μ) hyphae; clamp connections present.

Habit, habitat and distribution: Cespitose under conifers, Rhododendron, Ore., Oct. 14, 1944, Sm.-19699.

Observations: Differs from R. lividus in color of pileus.

Rhodophyllus Sm.-24351

Pileus 3-5 (8) cm. broad, convex with an incurved margin, expanding to plane or the margin slightly arched, some remaining broadly convex, moist, margin faintly striatulate and in many caps lobed, surface glabrous at first but becoming minutely furfuraceous from loosened cuticle fibrils, hygrophanous, when moist near "avellaneous" (but with more yellow), paler and near pale pinkish buff faded; flesh moderately thick but watery gray and fragile, odor none, taste slightly farinaceous; lamellae close to subdistant, moderately broad, adnate to subdecurrent, pallid ("tilleul buff") or slightly watery gray, flesh color in age, edges becoming eroded; stipe 3-13 cm. long, 9-15 (20) mm. thick, equal or slightly enlarged downward, becoming hollow, fragile, transversely undulating, glabrous but streaked longitudinally with whitish fibrils.

Spores 6-8 x 6-7 μ , angular-subglobose, pink in KOH, yellow in Melzer's sol.; basidia four-spored, 32-38 x 6-8 μ , content homogeneous; pleurocystidia none; cheilocystidia none; gill trama hyaline in KOH, parallel, the hyphae relatively narrow; pileus trama homogeneous, hyaline in KOH; clamp connections present.

Habit, habitat and distribution: Gregarious in moss along a trail, Salmon River, Mt. Hood National Forest, Ore., Oct. 10, 1946, Sm.-24351.

Observations: A pale-colored species in which the furfuraceous faded pileus and $\frac{1}{2}$ decurrent gills are distinctive.

Subsection E
Key to Species

1. Spores 9-11 μ or more long 2
1. Spores 8-10 or less long 8
 2. Pileus white, surface soft and cottony . 49. R. Sm-10007
 2. Pileus colored 3
3. Stipe bister at base in age. 50. R. Sm-40257
3. Stipe not darkening conspicuously. 4
 4. Pileus convex to merely obtuse 5
 4. Pileus distinctly conic young (truncate-conic
in R. citratus) 6
5. Pileus conspicuously translucent striate moist;
gills broad 51. R. Sm-30720
5. Not strongly striate; lamellae narrow . . . 52. R. Sm-40604
 6. Basidia 2-spored. 53. R. citratus
 6. Basidia 4-spored 7
7. Stipe 8-14 cm. long; spores 9-11 μ long. . . 54. R. Sm-38972
7. Stipe 3-4 cm. long; spores 10-13 μ long. . . 55. R. Sm-36708
 8. Taste bitter to disagreeable 9
 8. Taste mild 10
9. Taste bitter but not lasting; spores 5-6 μ diam.,
angular-globose 56. R. Sm-33-1011
9. Taste lasting and very disagreeable; spores
7-10 x 6-8 μ 57. R. Sm-15184
 10. Pileus 10-18 cm. broad. . 58. R. ferruginans (Sm-9189)
 10. Pileus smaller. 11

11. Odor fragrant, pleasant, often soon vanishing,
or nitrous at first changing to fragrant 12
11. Odor none 18
12. Pileus pinkish buff to pallid to avellaneous
or wood brown to hair-brown 13
12. Pileus dark dingy yellow brown. 16
13. Gills narrow and in age decurrent; subhymenium
thickish and subgelatinous (in KOH) . .59. R. speculus (Sm-33-
1044)
13. Not as above 14
14. Cheilocystidia 18-26 x 4-7 μ 60. R. Sm-15271
14. Cheilocystidia none 15
15. Pileus convex-umbonate, when moist obscurely
fibrilliose squamulose 61. R. Sm-30775
15. Pileus plane to depressed; appearing
furfuraceous only when faded 62. R. Sm-17136
16. Odor strongly nitrous at first 63. R. Sm-18905
16. Odor merely fragrant 17
17. Lamellae close and narrow 64. R. Sm-19701
17. Lamellae broad and subdistant . . 65. R. niderosum (Sm-24869)
18. Lamellae drab to mouse gray. 19
18. Lamellae pale gray to pallid or cinnamon
buff at first 20
19. Spores 8-10 x 6-8 μ , angles prominent.66. R. Sm-12092
19. Spores 6-8 x 5-7 μ , obscurely angular. 67. R. Sm-736
20. Spores 6-7 x 5-6 μ 68. R. Sm-19240
20. Spores 7-10 x 6-9 μ 21

21. Spores 5-10 x 6.5-9 μ ; pileus "wood brown",
not viscid 69. R. Sm-29153
21. Not as above 22
22. Gills pallid gray young; pileus
"Saccardo's umber" fresh. 70. R. Sm-6121
22. Gills cinnamon buff to ochraceous salmon
when young; pileus "olive brown" to
"buffy brown" 71. R. Sm-39190

Rhodophyllus Sm.-10007

Pileus 3-5 cm. broad, broadly convex with an incurved margin, expanding to nearly plane, surface cottony and soft to the touch (not viscid), pure white and opaque at all stages, finally creamy in age; flesh thin, white, rather firm, odor and taste none; lamellae pure white, becoming flesh color, adnate or finally depressed around stipe, close to subdistant, (45-60 reach stipe, 3 tiers of lamellulae), edges minutely fimbriate when under a lens; stipe 6-10 cm. long, 5-8 mm. thick, equal above a slightly enlarged base, with a white cottony mycelium at base and a soft closely knit cottony covering extending to apex, hollow, flesh whitish within.

Spores 11-14 x 6-8, angular-elliptic and tuberculate as a result of the prominent bumps and deep sinuses, pink in KOH, yellowish in iodine; basidia four-spored, 30-35 x 10-12 μ , content somewhat granular; pleurocystidia scattered to rare, similar to cheilocystidia; cheilocystidia 50-65 x 12-18 (20) μ , broadly fusoid with pointed apices, with yellowish content in KOH; gill trama \perp parallel, dingy ochraceous in KOH; (Hymenium darker ochraceous as revived); pileus trama homogeneous beneath a poorly formed pellicle of floccose narrow hyaline hyphae, all parts dingy ochraceous as revived in KOH; clamp connections present.

Habit, habitat and distribution: Scattered under second growth hardwoods, near Cades Cove, Tenn. (outside the Park), Aug. 10, 1938, Hesler & Smith 10007.

(more)

Observations: This is a very distinct species of Rhodophyllus because of the soft covering over pileus and stipe, large fusoid cystidia, elongated prominently angular-tuberculate spores and white pileus gills and stipe. As revived in KOH there are dark rusty bodies in the hymenium with a granular the content of pseudocystidia, but in the revived material the picture was confused by collapsed basidia and the large fusoid pleurocystidia. When fresh material is again collected it should be examined carefully for pseudocystidia.

Rhodophyllus Sm.-40257

Pileus 3-6 cm. broad, broadly conic but expanding to plane with hardly a trace of an umbo, surface glabrous, hygrophanous, dark bister to fuscous-bister, fading in streaks to near snuff brown, margin striate moist; flesh very thin and fragile, cap readily splitting, odor and taste not distinctive; lamellae close moderately broad, ascending adnate but narrowly attached, gray to gray-brown young and dull vinaceous at maturity, edges becoming uneven; stipe 4-7 cm. long, 3-10 mm. thick; equal, hollow, very fragile, about concolorous with pileus and distinctly twisted-striate (but naked and glabrous), bister in base in old specimens (only slightly darker there than at apex).

Spores 9-12 x 8-11 μ , angular-nodulose, subglobose in outline, pale pink in KOH, in Melzer's sol. dingy yellowish; basidia four-spored, 24-30 x 8-10 μ (short and fat), content with many small globules; pleurocystidia and cheilocystidia none seen; gill trama parallel but the hyphae of broad (10-25 μ) cells, subhymenium not distinctive; pileus trama homogeneous, of greatly inflated hyphal cells, walls pale bister to dark bister in KOH; no clamp connections seen (demonstration difficult because of large size of hyphal cells).

Habit, habitat and distribution: Gregarious in wet mountain meadows, Meadow Creek, Mt. Rainier National Park, Wash., Sept. 25, 1952, Mc Intyre & Smith--40257

Observations: The evenly dark color, lack of odor or taste, angular-nodulose spores, and extreme fragility are distinctive.

Rhodophyllus Sm.-30720

Pileus 2-4 cm. broad, margin curved in at first, convex young, expanding to broadly convex but usually with the disc flattened or slightly depressed in a limited area, surface glabrous, moist, hygrophanous, "sepia" in buttons or at least over disc in partly expanded caps, margin soon paler, (a dingy yellow-brown) between the conspicuous dark translucent striations, fading on the disc first to near yellow-cinereous, at times with a honey-gray disc when remoistened or after standing in cool damp weather; flesh thin, fragile, watery, concolorous with surface, pallid faded, odor and taste not distinctive; lamellae near avellaneous, gradually becoming darker to near wood brown and finally flesh color, broad, only moderately close, becoming adnexed, edges becoming eroded; stipe 4-6 cm. long, 3-5 mm. diam., terete or slightly compressed, hollow, fragile, concolorous with marginal area of pileus, "Saccardo's umber" or paler and dingy honey color, naked and glabrous but at first appearing silvery streaked from silvery fibrils.

Spores 10-12.5 x 6.5-8 μ , angular elliptic, pale flesh tinted in KOH, apiculus oblique and prominent, yellowish in iodine; basidia two-spored, 38-44 x 9-10 μ , not granular in KOH; pleurocystidia and cheilocystidia none; gill trama parallel or nearly so, pileus trama homogeneous beneath a poorly differentiated hypodermal zone and a thin non-gelatinous pellicle of narrow hyphae; no clamp connections present.

(more)

017715-00

Observations: This is a common species at high elevations in the Cascades and can be found from the time the snow melts until the freezing weather after the fall rains. It is a rather dingy brown hygrophanous species without odor or taste and spores like those of R. strictus.

Rhodophyllus Sm.-40604

Pileus 3-4.5 cm. broad, convex with an inrolled margin, expanding to broadly convex or with a slight umbo, surface glabrous, moist, hygrophanous, pale cinnamon, avellaneous faded but with more ochraceous in dried specimens; taste mild; lamellae close, narrow, adnate, pale cinnamon, edges even; stipe 4-6 cm. long, 5-6 mm. thick, terete or compressed.

Spores 9-11 (12) \times 5.5-7 (8) μ , angular-elliptic, pink in KOH; basidia four-spored, 40 \times 9-10 μ ; content homogeneous but in many equally highly refractive throughout, as in laticiferous hyphae; pleurocystidia and cheilocystidia none; or the latter merely as scattered filaments 4-6 μ in diam.; gill trama wood brown in KOH, parallel, laticiferous hyphae rare; pileus trama homogeneous, with a few filaments 4-7 μ over surface as a rudimentary pellicle, some of these refractive in KOH, tramal body wood brown in KOH; clamp connections none.

Habit, habitat and distribution: On moss under conifers, St. Andrew's Creek, Mt. Rainier National Park, Wash., Oct. 5, 1952, Sm.-40604.

Observations: A typical "Entoloma" but not resembling E. strictius in stature. However, check that species carefully.

53

~~True~~

Rhodophyllus. Sm-39446 -(cetraliss?)

Pileus 1.5-3(4) cm. broad, obtusely conic, the margin bent in slightly, expanding to truncate-campanulate or margin spreading and disc with a low flattened umbo, surface moist and hygrophanous, margin somewhat translucent-striate, colors dull cinnamon brown or with more ocher, fading to dingy yellowish gray or with more flesh color as spores mature; flesh thin, not markedly fragile, concolorous with surface, odor and taste not distinctive; lamellae broad, close, ascending adnate, grayish brown young, finally vinaceous from spores, edges even or becoming eroded; stipe 6-10 cm. long, 3-6 mm. thick, long and strict, longitudinally silky-striate, ground color pale butterscotch yellow to pale honey.

Spores 9-11 x 7-8 μ , angular-tuberculate; basidia two-spored, 36-44 x 9-10 μ ; pleurocystidia none seen; cheilocystidia none seen; gill trama somewhat interwoven; pileus trama homogeneous.

Habit, habitat and distribution: Scattered on wet soil at edge of bog, Tahquamenon Falls State Park, Michigan, August 11, 1952. Sm-39446.

Observations: The aspect is that of R. strictius and the colors are also similar but the two-spored basidia and truncate umbo on the pileus are distinctive.

Rhodophyllus Sm-38972

(close to 38969)

Pileus 3-7 cm. broad, sharply conic with the margin curved in against the gills, expanding to conic-campanulate or the margin spreading, the umbo usually conic and prominent, surface moist and hygrophanous, "cinnamon brown" varying light to darker, fading in streaks from the disc to dingy ochraceous or finally pallid, at times "pale pinkish buff", margin striatulate when moist; flesh ⁺concolor with surface, moist and faded, odor and taste not distinctive or slightly bitterish and soon mild; lamellae close, ascending adnate to free or nearly so, narrow, becoming moderately broad, close (but in large caps ⁺sub-distant), color "wood brown" to a dull cinnamon when young, "Sayal brown" eroded; stipe 8-14 cm. long, 3-8 mm. at apex, evenly enlarged downward, fragile, conspicuously longitudinally striate (often, twisted striate), with a pallid sheen from the appressed fibrillose striations, tinged with color of the pileus and becoming pallid ochraceous in fading.

Spores 9-11 x 6-7.5 u, angular-tuberculate, pinkish under the microscope when fresh; basidia four-spored, 36-44 x 9-11 u; pleurocystidia and cheilocystidia none seen, gill trama sub-parallel, the hyphae pale tan (color in wall?), pileus trama homogeneous, hyphae colored as in gill trama, cuticular layer of more compactly arranged hyphae than those in tramal body; clamp connections not seen.

Habit, habitat and distribution: Scattered in moist hemlock-birch forest, Lower Falls, Tahquamenon Falls State Park, Mich., June 19, 1952. Sm-38969.

Observations: The bitterish to mild taste, cinnamon brown pileus, wood brown to dull cinnamon gills when young, fragile and striate stipe are distinctive. It is close but readily distinct from 38969-both compared fresh.

Rhodophyllus Sm.-36708

Pileus 2.4 cm. broad, conic expanding to conic umbonate, margin often remaining decurved, surface watery gray, glabrous, hygrophanous, fading to silvery gray; odor and taste none; lamellae broadly adnexed, broad (toward cap margin), close, pallid gray (concolorous with pileus margin), finally vinaceous; stipe 3-4 cm. long, 4-6 mm. thick, enlarged downward, whitish, silvery fibrous-striate.

Spores 10-13 x 6-8 μ , angular-elliptic, angles prominent, pinkish in KOH; basidia four-spored, $30 \times \pm 9 \mu$, content mostly homogeneous, pleurocystidia and cheilocystidia none; gill trama parallel or nearly so; pileus trama homogeneous beneath a poorly defined non-gelatinous pellicle; clamp connections absent.

Habit, habitat and distribution: Gregarious on sandy soil in an oak-barren, Tapinabee, Mich., July 7, 1951, Sm.-36708.

Observations: A small "Entoloma" with larger spores. It may be close to E. strictius.

Rhodophyllus - Sm.-331011

(B. Blauxami var. triste?)

Pileus 1-5.5 cm. broad, convex to obtusely conic-campanulate, glabrous, hygrophanous, dark fuliginous with a purplish cast, (nearest "vinaceous slate") fading to a "light brownish drab" or "light vinaceous drab" (grayish with purplish cast when faded), striatulate on margin; flesh thick on disc, gray with a purplish cast, taste intensely bitter but not lasting, odor faintly soapy when flesh is crushed; lamellae broad, close adnate, in age sinuate, pale gray at first becoming flesh color (no purplish), edges eroded in age; stipe 4-7 cm. long, 5-10 mm. thick, pale gray appearing whitish, longitudinally fibrous striate, but glabrous, consistency fibrous, dull solid, or with a slight cavity.

Spores 5-6 μ , angular-globose, the angles obscure, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 32-35 \times 8-9 μ , content homogeneous in KOH; pleurocystidia and cheilocystidia none; gill trama subparallel, hyaline, subhymenium not distinctive; pileus trama hyaline and homogeneous, cuticular hyphae appressed, radial, compactly arranged; clamp connections present.

Habit, habitat, and distribution: On humus near edge of bog, Mud Lake Bog, Whitmore Lake, Mich. Sept. 25, 1933, Sm.-33-1011.

Observation: This fungus is specifically distinct from R. Sm.-3238 by bitter taste, different color, and smaller spores.

Rhodophyllus Sm.-15184

Leptoma

Pileus 2-4 cm. broad, nearly flat with a decurved margin which is inrolled at first, soon broadly depressed over the disc, at maturity either broadly and deeply infundibuliform or the margin remaining arched, surface moist, almost glabrous but under a lens faintly velvety to subfibrillose around the disc, translucent striate on the margin, color "Dresden brown" to "Preuts brown" except for the blackish brown ("mummy brown") disc, in age when moist nearly "mummy brown" over all, becoming more fibrillose-furfuraceous as moisture escapes, merely subhygrophanous, fading slowly to a deep grayish brown; flesh thin, nearly equal, concolorous with the surface, watery, taste very strong and disagreeable (bitter and nauseous), odor very strong, reminding one somewhat of burnt rubber but more pungent; lamellae close (45-50 reach stipe), 3 tiers of lamellulae, broadly adnate to short decurrent at first, becoming short-to long-decurrent, greatly attenuated at the stipe, moderately broad (3-8 mm.), whitish to very pale gray at first, dingy vinaceous gray in age, edges only slightly uneven; stipe 3-6 cm. long, 3-4.5 mm. thick, equal or some enlarged toward base, terete or compressed, stuffed becoming hollow, glabrous and watery except for a thin coating of white mycelium at the base, pale gray when young, in age nearly concolorous with pileus.

Spores 7-10 x 6-8 μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-36 x 10-11 μ , with some oil globules, hymenium dull ochraceous in KOH; pleurocystidia none; cheilocystidia vesiculose to broadly clavate, rare to scattered, 12-18 μ broad; gill

(more)

Sm.-15184

trama parallel, pallid to pale buff in KOH, subhymenium not distinctive; pileus trama at first with a turf of clavate pilocystidia but these \pm matted down or fibrils in age, content dull brown in KOH; clamp connections present.

Habit, habitat and distribution: Scattered under brush at edge of lake, Saginaw forest, Ann Arbor, Mich., July 11, 1940, Sm.-15184.

Observations: The decurrent gills, dark brown pileus and unique odor and taste are outstanding characters.

Rhodophyllus ferriginans Pk. Sm.-9189

Pileus 10-18 cm. broad, broadly conic becoming plane with a wavy-undulating margin, at times retaining a slight conic umbo, surface glabrous, smooth, lubricous, without a distinct pellicle, margin inrolled, color pale or dark fuliginous, not fading, in age appearing canescent-streaked; flesh relatively thin, grayish to pallid, odor none, taste mild; lamellae close (95-115 reach stipe), sharply and broadly adnexed, narrow to broad (10-15 mm.), whitish at first, becoming pale flesh color, edges uneven to eroded; stipe 10-18 cm. long, 1-4 cm. thick, narrowed below, enlarged above, solid, white (concolorous with gills or off color to pallid gray), glabrous, innately longitudinally striate when young, becoming lacerate-fibrillose scaly above in age from breaking of cuticle.

Spores 8-10 x 6-8.5 μ , angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 x 8-11 μ , content \pm homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel; pileus trama homogeneous; hyphae over surface radial and appressed, narrower than those of tramal body but no sharply differentiated layer present; clamp connections present.

Habit, habitat, and distribution: Gregarious-subcespitose under oak and yellow pine, Cave Junction, Ore., Nov. 29, 1937, Sm.-9189.

Observations: The lack of a taste and pellicle separate this species from R. lividus.

Pileus 2.5-8 cm. broad, convex to broadly conic, in age broadly convex with a conic umbo, plane, or the margin uplifted somewhat, dingy yellowish tan, moist (closest to "Avellaneous"), watery, hygrophanous, fading to dingy whitish, usually striate when moist; flesh thin and watery, whitish, odor fragrant, taste mild; lamellae narrow, close, grayish white then pink, adnate with a decurrent tooth when young, distinctly decurrent in age, widest at stipe, evenly tapered to pileus margin. Stipe 5-11 cm. long, 4-10 mm. thick, equal or slightly enlarged downward, white, longitudinally striate, glabrous except for a pruinose apex, surface undulating, with white mycelium at base.

Spores 6-8 x 5-7 μ , angular-globose to angular-subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 x 8-9 μ , ventricose below apex, content in most homogeneous (in KOH); pleurocystidia and cheilocystidia none; gill trama parallel, subhymenium thickish and subgelatinous; pileus trama hyaline and homogeneous, surface hyphae radial; clamp connections present.

Habit, habitat, and distribution; Gregarious in grassy hardwoods, Ann Arbor, Mich., Sept. 29, 1935, Sm.-33-1044.

Observations: The decurrent gills, pale pileus which fades to whitish, fragrant odor and undulating stipe are good field characters.

Rhodophyllus Sm.-15271

Pileus 3-8 cm. broad, conic at first, in age plane or the margin recurved and the disc with a low but conic umbo, surface glabrous, moist, hygrophanous, pale amber moist (a watery "hair brown"), fading to pale dingy gray over all; flesh very thin and sissile, grayish to dark brownish gray, readily splitting, odor very fragrant and heavy but soon vanishing, taste mild; lamellae "wood brown" or darker, developing a reddish tone as spores mature, adnexed, soon seceding, broad (6-8 mm.), close to crowded, edges eroded and whitish; stipe 3-5 cm. long, 8-11 mm. equal, hollow, very fragile, sparsely appressed fibrillose, interior grayish, splitting readily.

Spores 7-8 (10.5 x 7-9 μ , angular-elliptic, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-34 x 8-10 μ , content of many with globules; pleurocystidia none; cheilocystidia present, fusoid-ventricose to ventricose-subcapitate or quite irregular in shape, small, 18-26 x 4-7 μ , hyaline, thin-walled; gill trama parallel; pileus trama homogeneous, surface hyphae radial and of various sizes; no clamp connections seen.

Habit, habitat and distribution: Gregarious under brush, Ann Arbor, Mich, Sept. 9, 1940, Sm.-15271.

Observations: The dark brown gills, peculiar odor, and cheilocystidia are distinctive.

Rhodophyllus Sm.-30775

Pileus 3-6 cm. broad, obtuse with a slightly incurved margin, expanding to convex-umbonate, margin often becoming lobed and wavy, umbo obtuse, surface moist and hygrophanous, margin not distinctly translucent-striate, moist and obscurely fibrillose-squamulose under a lens, hygrophanous, when faded appearing glabrous to naked eye, color pallid grayish avellaneous moist, near "tilleul buff" faded; flesh thin, watery grayish becoming pallid, taste mild, odor fragrant; lamellae narrow to moderately broad, bluntly adnate, close to subdistant, tilleul buff to grayish avellaneous at first, pinkish in age, edges even but becoming eroded; stipe 4-8 cm. long, 8-14 mm. at apex, clavate, hollow and exceedingly fragile, surface pallid to concolorous with pileus, fibrous-striate from splitting of cuticle, apex with scattered loosened tips of fibrils.

Spores 6-8.4 x 6-7.5 μ , angular-globose, in side view with a well-defined suprahilar depression, apiculus not conspicuous, hyaline in KOH, yellow in Melzer's sol.; basidia four-spored, 34-40 x 8-10 μ , content hyaline and homogeneous in KOH; pleurocystidia and cheilocystidia none; gill trama parallel, subhymenium not distinctive; pileus trama homogeneous and hyaline (pellicle scarcely differentiated); clamp connections present.

Habit, habitat and distribution: Gregarious under alder and conifers, Longaire, Wash., Mt. Rainier National Park, Aug. 30, 1948, Sm.-30775.

Observations: This species appears close to R. niderosus but differs in the obscurely squamulose hygrophanous pileus and [^]umbonate pileus.

Rhodophyllus Sm.-17136

Pileus 3-6.5 cm. broad, very broadly convex with the margin inrolled at first, becoming plane or the margin uplifted and undulating to quite wavy, glabrous, at times the cuticle becoming very finely lacerated to form minute scattered glistening scales, moist and hygrophanous, translucent striatulate on the margin, a pallid watery pinkish buff, when faded near "tilleul buff"; flesh equal, very fragile, thin, watery-pallid or concolorous with surface, taste mild, odor distinctly fragrant; bluntly adnate or adnate and toothed, close, 2 tiers of lamellulae, moderately broad (5-6 mm), nearly equal, pallid like pileus but becoming vinaceous in age, edges uneven; stipe 6-9 cm. long, 6-9 mm. thick, equal or slightly enlarged downward, hollow, fragile, pallid within, surface pallid and appearing somewhat fibrous striate from splitting cuticle.

Spores 6-8 μ , angular-globose, pale pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-44 \times 9-12 μ , content homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel, brownish in KOH to nearly hyaline, subhymenium hyaline but thin; pileus trama homogeneous, dingy in KOH; clamp connections present.

Habit, habitat and distribution: Gregarious under conifers, Olympic Hot Springs, Olympia National Park, Wash., Sept. 22, 1941, Sm.-17136.

Observations: There was no sign of a gelatinous pellicle. This and the fragrant odor distinguish the species from R. lividus.

Rhodophyllus nidoreus

Sm.-18905

Pileus 2-4.5 cm. broad, obtusely umbonate with an in-rolled margin, expanding to plane or retaining a low umbo, in age shallowly depressed or with a slight depression around the low umbo, margin usually arched, surface glabrous, moist, hygrophanous, striatulate at first, opaque when faded, color "Saccardo's umber" moist, becoming paler grayish alutaceous before fading, fading (on disc first) to dingy grayish white or retaining a tinge of alutaceous; flesh thin but not fragile, watery grayish fading to off-white, odor strongly nitrous at first, somewhat fragrant after standing, taste mild; lamellae close (36-42 reach stipe), 2-3 tiers of lamellulae, narrow to moderately broad, bluntly adnate, becoming somewhat adnexed or with a short decurrent tooth, pallid gray at first, soon vinaceous from spores, edges even; stipe 4-6 cm. long, 3-6 mm. thick at apex, equal or slightly enlarged below, tinged with color of pileus, whitish below, apical area slightly furfuraceous, mid portion glabrous, and longitudinally striate from splitting of cuticle, base whitish from mycelium.

Spores 7-9 \times 6-7.5 μ angular- subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-40 \times 10-12 μ ; pleurocystidia none (basidioles sometimes ventricose with obtuse apices); cheilocystidia none; gill trama parallel, hyaline; pileus trama perfectly homogeneous, hyphae on surface radially arranged.

Habit, habitat and distribution: Gregarious at edge of a bog under aspen, Crooked Lake, Washtenaw County, Mich., Sept. 22, 1943, Sm.-18905.

Observations:

Pileus 3-5 cm. broad, broadly convex or slightly umbonate, becoming plane or the disc slightly depressed, the margin often wavy, glabrous, when moist striatulate on margin in pale caps, "Snuff brown" or paler and with more yellow, subhygrophanous, fading slowly to grayish brown; flesh thin, fragile, watery gray, pallid when faded, equal, odor fragrant and sharp, taste perfectly mild; lamellae pallid gray becoming dingy pink, moderately close, narrow, 3-4 mm.; bluntly adnate becoming slightly adnexed, 3 tiers of lamellae, edges becoming slightly eroded; stipe 6-9 cm. long, 4-7 mm. thick at apex, hollow, surface undulating somewhat, longitudinally striate, pale grayish brown (grayer than pileus) base whitish.

Spores 8-10 x 6-8.5 μ , angular-elliptic to angular-subglobose, pink in KOH, yellow in Melzer's sol.; basidia four-spored, 30-36 x 8-9 μ , content homogeneous; pleurocystidia none seen; cheilocystidia none; gill trama parallel, nearly hyaline in KOH, subhymenium not distinctive; pileus trama homogeneous, hyphae of cuticular region radially arranged; clamp connections present but rare.

Habit, habitat, and distribution: Cespitose-gregarious, under maple, Rhododendron, Ore., Oct. 14, 1944, Sm.-19701.

Observations: This probably is R. niderosus.

Rhodophyllus Sm.-24869 try niderosum!

Pileus (2.5) 3-8 cm. broad, papillate-convex with an incurved or inrolled margin, some flattened on disc, expanding to broadly convex or plane, often with a small slightly sunken abrupt umbo, the margin becoming variously irregular (crenate, wavy, etc.), surface glabrous, moist, hygrophanous, often translucent striate nearly to disc, "Sepia" to "Saccardo's umbo", fading to pallid grayish, in age margin lacerated and cuticle splitting into minute shreds giving a silky effect, finally diffracted-scaly; flesh thin, very fragile, watery, concolorous with pileus, odor fragrant (not nitrous), taste mild; lamellae broad, bluntly adnate to short decurrent, typically subdistant but varying close to distant, 2 tiers of lamellulae, pallid grayish then dingy flesh color, edges becoming lacerated; stipe 6-12 cm. long, (3) 4-8 mm. thick, stuffed with a pallid pith, exceedingly fragile, naked and glabrous, concolorous with pileus or paler, some transversely undulating, cuticle shredding in age to give long-striate effect, equal or slightly enlarged at base.

Spores 8-9 x 6-8 μ , angular-subglobose, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-36 x 7-8 μ , content homogeneous or nearly so; pleurocystidia and cheilocystidia none; gill trama subparallel, brownish in KOH, subhymenium thickish and hyaline; pileus trama practically homogeneous, surface layer of radial hyphae 5-8 μ broad, content smoky brown in KOH; clamp connections present.

Habit, habitat and distribution: Gregarious under alder, Mile Bridge, Mt. Hood National Forest, Wash., Oct. 21, 1946 (Sm.-24869)

Rhodophyllus Sm.-12092

Pileus 1.5-3 cm. broad, broadly convex to obtuse or bluntly conic, becoming almost plane, in age the margin frequently elevated and undulating, when moist with broad translucent striations, hygrophanous, color when moist "mummy brown" or darker and close to "fuscous", fading to near "Drab" or grayer, cuticle readily splitting radially causing pileus to be rimose; flesh very thin (1 mm. \pm), concolorous with surface, very fragile, odor and taste not distinctive; lamellae "drab" or paler but darkening in old caps as well as showing a vinaceous cast, close to subdistant, 26-32 reach the stipe, broad (\pm 4 mm.), two tiers of lamellulae, adnate but soon seceding, ventricose, the faces quite wrinkled at times, edges uneven; stipe 4-6 cm. long, 3-6 mm. thick, equal, with a large central cavity, fragile, often compressed and twisted, surface pale mummy brown and at first covered by a thin hoary-fibrillose to pruinose coating, apex \pm fibrillose punctate.

Spores 8-10 \times 6-8 μ , broadly angular-elliptic to subglobose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 34-40 \times 8-11 μ , content homogeneous; pleurocystidia none seen; cheilocystidia none--or some basidia with elongated sterigmata which might be mistaken for cystidia; gill trama parallel, pale brownish subhymenium, hyaline; pileus trama homogeneous, brownish in KOH; clamp connections present but rare.

Habit, habitat and distribution: Gregarious on a freshly seeded lawn just made over a peat deposit, Kalamo, Wash., April 29, 1938, Sm.-12092.

Observations:

Rhodophyllus 736

Pileus 3-6 cm. broad, conic, becoming umbonate-plane, glabrous, hygrophanous, "fuscous" to blackish on disc, "olive brown" after fading, margin near "buffy brown" and striate moist, grayer faded, lubricous to subviscid when wet but pellicle not separable; flesh gray to pallid, odor and taste mild; lamellae crowded, dull gray, narrow, scarcely attached (only by a line), edges eroded; stipe 6-8 cm. long, 8-12 mm. thick, clavate, soft, watery, hollow, dull gray, appressed-fibrillose, becoming longitudinally striate.

Spores 6-8 x 5-7 μ , angular-globose to angular-sub-globose, angles obscure, nearly hyaline in KOH; basidia four-spored 30 x 8-9 μ , content homogeneous to slightly granular, pleurocystidia none; cheilocystidia none or rarely filamentous, 5-7 μ in diam; gill trama parallel, subhymenium slightly glassy; pileus trama homogeneous, surface hyphae appressed, no gelatinous layer present; clamp connections none.

Habit, habitat and distribution: Gregarious under white pine, Sept. 2, 1934, Warrensburg, N. Y., Sm.-736.

Observations: The obscurely angular very pale spores, dark fuliginous colors, and lack of an odor or taste are distinctive.

Rhodophyllus Sm.-19240

Pileus 1-2.5 cm. broad, obtusely conic, the margin incurved, expanding to broadly conic or campanulate, glabrous and moist to lubricous, fuliginous, disc blackish, striate over moist margin, hygrophanous, cinereous when faded; flesh soft and watery, grayish, odor and taste none; lamellae close, broad, rounded-adenate and seceding, pallid cinereous becoming vinaceous, edges uneven to slightly eroded; stipe 5-8 cm. long, 3-6 mm. at apex, slightly enlarged downward, hollow and fragile, appressed silky and undulate.

Spores 1-7 x 5-6.5 μ , subglobose, obscurely angular, practically hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-34 x 8-9 μ , content homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel; slightly colored (brownish) in KOH, subhymenium hyaline, thin, not otherwise distinctive; pileus trama homogeneous, scarcely colored in KOH (pallid to brownish) cuticle of radial hyphae but cells broad and $\frac{1}{2}$ short as are those of trama proper, numerous hyaline laticiferous hyphae present; clamp connections present.

Habit, habitat and distribution: Gregarious in mixed forest (hardwood & conifers), Rhododendron, Ore., Sept. 28, 1944, Sm.-19240, collected by Wm. B. Gruber.

Observations: The small subglobose spores, Myceni-like appearance, gray color and lack of an odor or taste are distinctive.

Rhodophyllus Sm.-29153

Pileus 3 cm. broad, disc with a small obtuse abrupt umbo, sloping to the decurved margin, surface perfectly glabrous and moist, margin translucent striate, color evenly "wood brown" shaded with gray, hygrophanous, paler gray and silky when faded; flesh watery gray, thin, fragile, pallid when faded, odor and taste not distinctive; lamellae close, (3 tiers of lamellulae), broad, sinuate, grayish becoming flushed pink, edges even; stipe 8 cm. long, 4 mm. thick at apex, evenly enlarged downward, hollow, cortex watery gray like pileus, surface silvery gray and longitudinally striate from silky coating.

Spores 8-10 x 6.5-9 μ , angular-subglobose, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 38-46 x 10-12 μ , some with oily-granular content; pleurocystidia and cheilocystidia none; gill trama parallel, dingy brownish in KOH; subhymenium not distinctive; pileus trama homogeneous, surface hyphae radial, in KOH evenly dull brownish to subhymenium; clamp connections present.

Habit, habitat and distribution: Single on humus in an alder flat, Takoma Creek, Mt. Rainier National Park, Wash., July 19, 1948, Sm.-29153.

Observations: This species has the aspect of R. strictius but differs in spore characters.

Rhodophyllus Sm.-6121

Pileus 3-6 cm. broad, convex, soon depressed over the disc and with or without a low obtuse umbo, sometimes merely plane in age, glabrous, moist, faintly translucent-striate near the margin, "Saccardo's umber" over all, hygrophanous, fading to "drab" or finally dingy ashy gray, fading around the disc first; flesh thin, watery-fragile, brown, odor and taste not distinctive; lamellae close, moderately broad (5-6 mm.), bluntly adnate, in age finally with a decurrent tooth, pallid gray becoming dull flesh color, edges slightly eroded; stipe 5-7 cm. long, 4-6 mm. thick, equal, stuffed with a white pith becoming hollow, longitudinally striate due to the splitting of the cuticle, pruinose and whitish above, pallid brownish gray toward the base which is usually white-cottony to scantily mycelioid.

Spores 7-9 (10) \times 6-8 μ , angular-subglobose, pale pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 32-38 \times 7-9 μ , content homogeneous; pleurocystidia and cheilocystidia none seen; gill trama parallel, subhymenium somewhat gelatinous; pileus trama with a \pm hyaline pellicular zone of both narrow and broad hyphae, layer beneath dull brown, paler again toward subhymenium; clamp connections present.

Habit, habitat and distribution: Gregarious under Aspen, Mud Lake Bog, Washtenaw County, Mich., Oct. 20, 1936, Sm.-6121.

Observations: Compare carefully with R. lividus.

Rhodophyllus Sm 39190

Pileus 3-6 cm. broad, obtuse with an inrolled margin, expanding to broadly umbonate with a spreading or slightly decurved margin, surface glabrous, lubricous, becoming translucent-striate, "olive brown" to "buffy brown" before fading to a yellow-gray brown, hygrophanous and usually fading in streaks, surface often variously rugulose, margin lobed at times, sometimes at least the marginal area with a salmon buff cast; flesh concolor with surface, watery, fading to pallid, odor and taste not distinctive (a trace only of farinaceous); lamellae close, broad, horizontally adnate becoming depressed adnate, when young "cinnamon buff" or with a tendency toward salmon-orange buff, gradually vinaceous from spores, edges becoming eroded; stipe 8-11 cm. long, 6-12 mm. at apex, evenly enlarged downward or nearly equal, stuffed, fleshy, cortex fibrous, surface whitish and long-striate, twisted striate in some, naked, somewhat watery-discolored after handling but no true color change.

Spores 7-9 x 6-7.5 μ , angular-elliptic; basidia four-spored, 36-44 x 9-11 μ ; pleuro- and cheilocystidia none seen; gill trama parallel, hyaline, not granular; pileus trama homogeneous, with a very thin gelatinous pellicle of narrow hyphae which give rise to narrowly clavate hyphal end-cells; clamp connections present.

Habit, habitat and distribution: Scattered in moist hardwood forests, often along edges of swamps; summer and fall, Sm. 39190, Pellston Hardwoods, Michigan, 7-20-52.

Observations: The cinnamon buff gills are the most reliable field character of this species. It is close to *R. lividus* in the firmness and thin gelatinous cuticle.

Section Nolanea

Stipe typically less than 5 mm. thick at apex; pileus
conic to flat but disc not depressed.

Key to Subsections

1. Cheilocystidia present (if filamentous
then conspicuous) Subsection F. (72-102)
1. Cheilocystidia absent or merely filamentous
and inconspicuous Subsection G.
also G. with (103)

Key to Species of
Subsection F

1. Spores 8-10 (12) μ in diameter 2
1. Spores typically less than 8 μ wide. 5
 2. Pileus olive brown to mummy brown. 3
 2. Pileus soon Isabella color to honey yellow 4
3. Spores 15-20 x 7-10 μ 72. R. dysthales (Sm-32-385)
3. Spores 10-12 x 8-12 μ 73. R. sphagnophilus (Sm-283)
 4. Spores 9-11 μ , quadrate; cheilocystidia
 - 50-90 x 10-25 μ 74. R. luteus
 4. Spores 11-15 x 9-12 μ ; cheilocystidia
 - 40-55 x 9-12 μ 75. R. Sm-37403
5. Spores typically 10 μ or more long. 6
5. Spores typically less than 10 μ long. 18
 6. Pileus pure white 76. R. Sm-279
 6. Pileus colored 7
7. Taste distinctive (bitter, disagreeable or farinaceous) 8
7. Taste mild or nearly so. 12
 8. Taste bitterish; spores 10-14 x 6.5-8.5 μ 77. R. versatilis (Sm-33-1050)
 8. Not as above (Spores 9-12 x 6-8 μ). 9
9. Pleurocystidia absent 10
9. Pleurocystidia present. 11
 10. Cheilocystidia of 2 types: clavate and 26-30 x 12-18 μ , and filamentous and 50-70 x 7-9 μ 78. R. Sm-33-696

10. Cheilocystidia subcylindric to ventricose
with flexuous neck and obtuse to subcapitate
apex, not much larger than basidia 79. R. Sm-5079
11. Pileus golden yellow to yellowish gray, cinereous
faded; pleurocystidia 50-65 x 15-24 (30) μ . . .
. . . . 80. R. Sm-33-1069
11. Pileus "wood brown" to "buffy brown", fading to
yellowish on disc; pleurocystidia 60-85 x
10-13 μ 81. R. Sm-40010
12. Spores 11-14 μ or more long 13
12. Spores 9-12 μ long (if typically less
than 10 μ see 18) 15
13. Cheilocystidia 26-40 x 6-10 μ . 82. R. strictipes (Sm-33-603)
13. Cheilocystidia 40-60 x 12-25 μ 14
14. Odor foetid 83. R. Sm-25726
14. Odor lacking. 84. R. dysthales (Sm-39639)
15. Pleurocystidia present 16
15. Pleurocystidia absent. 17
16. Pleurocystidia 60-90 x 12-20 μ . . . 85. R. Sm-39641
16. Pleurocystidia 40-60 x 7-12 μ . . . 86. R. Sm-29236
17. Gills broad 87. R. Sm-39318
17. Gills narrow. 88. R. Sm-29686
18. Spores 6-7 x \pm 3.5 μ , obscurely
angular 89. R. Sm-24239
18. Spores 7-10 μ long and 5 μ or more broad 19
19. Pleurocystidia present 20

19. Pleurocystidia absent 24
 20. Pleurocystidia with brilliant amorphous
purple content in KOH. 90. R. Sm-32-414
 20. Not as above 21
21. Pileus white to avellaneus. 22
21. Pileus drab to fuscous. 23
 22. Stipe white 91. R. sericellus (Sm-39189)
 22. Stipe violaceous brown to dingy
brownish 92. R. Sm-39194
23. At least some cheilocystidia with secondary
septa 93. R. Sm-40728
23. Cheilocystidia with only the basal septum . . 94. R. Sm-39236
 24. Cheilocystidium tibiiform. 95. R. Sm-16167
 24. Not as above 25
25. Cheilocystidia clavate to subvesiculose . . . 96. R. Sm-39275
25. Not as above 26
 26. Pileus dry and fibrillose to furfuraceous 27
 26. Pileus moist and hygrophanous 28
27. Pileus drab 97. R. Sm-29152
27. Pileus white with yellow disc. 98. R. Sm-16230 (see R. sericellus)
 28. Stipe "bister" beneath a coating of
gray fibrils 99. R. Sm-3056
 28. Stipe glabrous and naked, not darkening 29
29. Pileus with numerous filamentous to narrowly
clavate pilocystidia 3-6 μ in diam. 100. R. Sm-9856
29. Pileus not as above 30
 30. Cheilocystidia clavate to saccate,
35-45 x 10-18 μ 101. R. Sm-40358

30. Cheilocystidia 30-46 x 7-10 μ , fusoid-

ventricose 102. R. Sm-17502

Rhodophyllus dysthales (Atk) Singer?

Sm.-32-385

Pileus 7-15 (20) mm. broad, obtusely conic to nearly convex, apex decidedly flattened, near "mummy brown" or "olive brown" to near "natal brown" evenly colored, grayer in age but not hygrophanous, surface dry, covered evenly with a layer of fine, innate grayish squamules which give pileus a grayish sheen, slightly striate on margin in age, margin ragged-fibrillose and slightly crenate; flesh thin, concolorous with surface, odor and taste not recorded; lamellae broad, adnate, subdistant, concolorous with pileus but finally vinaceous from the spores, edge eroded and white fimbriate; stipe 2-5 cm. long, 1-3 mm. thick, equal or nearly so, colored like the pileus or a little paler, densely covered by an even fibrillose coating which breaks up into fine recurved fibrils darker brown at apex (grayish cast evident beneath).

Spores 15-20 x 7-10 μ , elongated angular-elliptic, pinkish in KOH, yellowish in Melzer's sol.; basidia 36-50 x 12-14 μ , four-spored, hyaline to yellowish revived in KOH, content homogeneous; pleurocystidia none; cheilocystidia abundant, subcylindric to clavate, 40-65 x 10-18 μ , walls brown in KOH; gill trama somewhat interwoven, near natal brown revived in KOH; pileus trama colored like the gill trama, cuticle a tangled mass of elongated pilocystidia and hyphal tips, all brown-walled and some with somewhat thickened walls greatly variable in size; clamp connections none.

(more)

Habit, habitat, and distribution: Gregarious to scattered on humus in brushy places and in forests, in the central and eastern states, summer and fall. It is rare during most seasons.

Observations: The sterile gill edge with its brown-walled cheilocystidia, greatly elongated angular-elliptic spores and dark colored squamulose pileus and stipe are distinctive.

Rhodophyllus sphagnophilus (Pk.) Sm.-283

Nolanea

Ecilia sphagnophila Pk.

Pileus 14 mm. broad, obtusely conic-campanulate, disc minutely squamulose, margin striatulate, evenly colored and near "mummy brown", fading slowly and while fading to dingy gray-brown appearing streaked; lamellae smoky brown young, becoming vinaceous, short-decurrent, rather distant, edges even and concolorous with faces; stipe 7 cm. long, 2 mm. thick, glabrous, concolorous with pileus.

Pack says white

Pack says
7.5-12.5 μ
6-7.5 μ

Spores 10-12 \times 8-12 μ , broadly angular-elliptic to angular-globose, pink in KOH, yellowish in Melzer's sol.; basidia 38-46 \times 12-14 μ , content granular; pleurocystidia rare to scattered, 40-60 \times 12-20 μ , broadly fusoid with sharp-pointed apices, hyaline; cheilocystidia similar to pleurocystidia; gill trama parallel, hyphae narrow and dull cinnamon in thickish sections; subhymenium not distinctive; pileus trama homogeneous, hyphae of cuticle with dark yellow brown content, some free hyphal tips projecting or \pm decumbent; clamp connections present.

Habit, habitat, and distribution: Single on sphagnum, North Creek Road, Adirondack Mts., N. Y., Aug. 30, 1934, Sm.-283.

Observations: The maturing basidia are more conspicuously granular-oily in KOH than any other species examined. The large spores, dark brown pileus and glabrous stipe are distinctive in the cystidiata group.

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Rhodophyllus luteus Sm 39279

Pileus 1.5-4 cm. broad, obtusely conic (but not cuspidate), with incurved margin at first, expanding to campanulate, surface glabrous, moist, only subhygrophanous, disc smoky yellow-brown ("Saccardo's Umber") margin "honey yellow" to "Isabella Color", opaque but becoming rumose striate, at times fading to give a striate effect, often lobed to slightly irregular on margin; flesh dull yellow, firm, taste bitterish, odor none; lamellae close, broad, ascending-adnate and narrowly attached, white at first, becoming pink from spores, often stained yellow near cap margin, edges even and concolorous if not stained; stipe 8-10 cm. long, 2-4 mm. thick, equal, firm, whitish within but surface concolorous with pileus and longitudinally fibrillose striate, in age at times slightly lacerate but typically glabrous young.

Spores 9-11 μ , angular-globose (quadrate); basidia four-spored, content granular, 40-50 x 11-13 μ ; pleurocystidia none seen; cheilocystidia abundant, subcylindric to clavate, 50-90 x 10-25 μ , thin walled, content if present granular; gill trama parallel or nearly so, content of cells granular; pileus trama homogeneous or nearly so except that hyphae of cuticle have conspicuously yellow contents.

Habit, habitat and distribution: Scattered to gregarious, mixed forest, Tahquamenon State Park, Michigan. July 24, 1952
A. H. S. 39279

Observations: The prominent cheilocystidia at once distinguish this from *R. cuspidatus*, but I have never observed any intergradation in the color and consider that a very reliable field character.

Rhodophyllus Sm.-37403

Pileus 2 cm. broad, obtusely conic as in *Mycena*, surface fibrillose-scurfy, "Isabella color" moist, gradually changing to near "honey yellow", typically dry; flesh firm, yellow, no odor or taste; lamellae white when young, finally flushed pink, broad, ascending-adnate, close; stipe 5 cm. long, 2 mm. thick, equal, firm and cartilaginous, color evenly dingy pale yellow (concolorous with paler areas of pileus), appressed fibrillose with fibrils near "Isabella color", pallid within, not darkening when bruised.

Spores 11-15 x 9-12 μ , globose-angular, many quadrate to triangular in side view, pinkish in KOH, yellowish in Melzer's sol.; apiculus long and prominent; basidia four-spored, 38-44 x 16-13 μ , content finely globular; pleurocystidia none seen; cheilocystidia inconspicuous, 40-55 x 9-12 μ , cylindric to subfusoid, ends obtuse, some fusoid-ventricose with subacute apices; gill trama parallel hyaline, globular content profuse; pileus trama hyaline and homogeneous beneath a cuticle of elongated hyphal end-cells (mostly un-branched) with dark smoky brown content in KOH, these cells cylindric to narrowly clavate and with clamps at the basal septum.

Habit, habitat and distribution: Single on an old conifer stump, Tabquamanon Falls State Park, Mich., Aug. 6, 1951, Sm.-37403.

Observations: This species differs from R. luteus in larger, less quadrate spores, and inconspicuous cheilocystidia.

Rhodophyllus Sm.-279 (Eccilia wivona Pk.)

sericella?

Pileus 10-15 mm. broad, convex becoming plane, appressed fibrillose, becoming slightly fibrillose and squamulose, broadly sulcate near the margin, pure white and opaque but becoming yellowish on the disc; lamellae short decurrent, distant, pure white then delicately pink, edges uneven; stipe 3-6 cm. long, 1-1.5 (2) mm. thick, glabrous, translucent, equal, fragile.

Spores 10-13 (14) x 6.5-8 μ , broadly angular-elliptic, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 x 8-10 μ , content homogeneous; pleurocystidia none; cheilocystidia of two types: 1) fusoid-ventricose with obtuse apices, hyaline, thin-walled 30-40 x 8-12 μ 2) clavate to subcylindric, 50-70 x 9-14 μ , hyaline and thin-walled, rare; gill trama parallel, hyaline; pileus trama homogeneous, hyphae of surface region radial but giving rise to many \pm upright or loosely appressed hyphal tips, the hyphae all hyaline and 9-12 μ in diam.; clamp connections present.

Type ?
E. nivea
shows no ch.

Habit, habitat and distribution: Scattered on sphagnum, Aug. 30, 1934, North Creek Road, Adirondack Mts., N. Y., R. L. Lowe. (A. H. Sm.-279).

Observations: The short-decurrent distant gills are the best field character. It is close to R. sericellus.

Rhodophyllus versatilis Fr. (Sm.-33-1050)

Pileus 2-3.5 cm. broad, conic becoming campanulate or finally umbonate-expanded or nearly plane, surface dry, evenly innately fibrillose, fibrils appressed, evenly colored a dull brownish gray (no match in Ridgway), sometimes the umbo paler, margin striate and striae darker than interspaces (when surface is wet); flesh thin, taste bitterish, odor none or slightly foetid (older specimens); lamellae narrow, shallowly adnexed, subdistant, intervenose, almost "fawn color" at first or "wood brown", soon vinaceous from spores, edges even; stipe 3-5 cm. long, 1.5-6 mm. thick, hollow, slender specimens very brittle, fibrous, evenly covered by a glaucous gray coating of appressed fibrils, striate above and also slightly pruinose.

Spores 10-14 x 6.5-8.5 μ , angular-elliptic to angular-ovate, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, (30) 40-45 x 10-13 μ , content somewhat granular old basidia often dull brown in KOH, pleurocystidia scattered, most abundant near gill edges, 60-80 x 10-20 μ , broadly fusoid-ventricose with pointed mucronate apices, thin-walled, smooth, hyaline in KOH; cheilocystidia similar to pleurocystidia; gill trama of broad slightly interwoven hyphae with brown walls, subhymenium hyaline, of narrow loosely interwoven hyphae; pileus trama homogeneous, hyphae all brown walled with granular incrustations; free hyphal ends present to form surface fibrils; clamp connections present but rare.

(more)

Habit, habitat and distribution: Gregarious on muck
in low woods and partly dried up bogs, George Reserve,
Pinckney, Mich., Oct. 11, 1933, Sm.-33-1050.

Observations: Closely related to R. flavoviridis.

The above species is very similar to R. flavoviridis but differs in the following characters: (1) The body is more robust and the legs are thicker. (2) The color is more uniform and the markings are less distinct. (3) The antennae are longer and the segments are more distinct. (4) The head is more rounded and the eyes are larger. (5) The thorax is more robust and the wings are thicker. (6) The abdomen is more robust and the segments are more distinct. (7) The legs are thicker and the joints are more distinct. (8) The feet are thicker and the claws are larger. (9) The overall appearance is more robust and the markings are less distinct. (10) The behavior is more gregarious and the movements are more coordinated.

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Rhodophyllus Sm.-33-696

Pileus 2-3.5 cm. broad, broadly convex or with a slightly pointed disc (but not typically umbonate), glabrous, hygrophanous, fading in streaks color rather dark fuliginous young, becoming nearly avellaneous and fading to pale gray, conspicuously translucent-striate and radially rugose also, margin eroded; flesh pallid with a decidedly farinaceous odor and taste; lamellae pale gray, adnexed to nearly free, broad, subdistant, edges very deeply eroded; stipe 4-6 cm. long, 3-4 mm. thick, pale gray to whitish, glabrous but appearing fibrous, cartilaginous, tubular, white cottony at base.

Spores 9-12 x 6-8 μ , angular-elliptic and obscurely tuberculate, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia 2- 3- and 4-spored, 36-40 x 9-12 μ , some with \pm oily content; pleurocystidia none; cheilocystidia rare to scattered, some broadly clavate to almost ovate, 30-26 x 12-18 μ , some filamentous, 50-70 x 7-9 μ , and straight or somewhat undulated, hyaline, thin-walled; gill trama \pm parallel, hyaline; pileus trama homogeneous, cuticular region not specialized other than its hyphae having some dissolved brownish pigment; clamp connections absent.

Habit, habitat and distribution: Scattered to gregarious under cedar on humus, Cross Village Mich., Aug. 19, 1933, Sm.-35-696.

Observations: The ragged appearance of this species is outstanding as are the scattered cheilocystidia and obscurely nodulose spores. Try *Leptonia longistriata* Peck.

Rhodophyllus Sm.-5079

Pileus 3-5 cm. broad, obtusely conic, becoming nearly plane and with a low obtuse umbo, margin often remaining slightly decurved, sometimes wavy, glabrous, hygrophanous, "bister" to "snuff brown", fading to dingy grayish brown, margin striate when moist; flesh concolorous with surface, thin and fragile, odor and taste of raw cucumber; lamellae close to subdistant, broad, deeply adnexed or attached by only a narrow tooth, "pale olive buff" when young, flesh tinted in age, edge eroded; stipe 8-12 cm. long 3-4 mm. thick, equal, strict, fragile, hollow, pale silvery gray or more sordid, longitudinally fibrous-striate to the pruinose apex, base white-cottony.

Spores 9-12 x 6-7.5 (3) μ , angular-elliptic, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-38 x 9-10 μ , some with slightly oily-globular content; pleurocystidia none; cheilocystidia present, subcylindric to contorted or subventricose with flexuous neck and obtuse to subcapitate apex; gill trama parallel, of broad, elongated cells, brownish to hyaline in KOH; pileus trama of enlarged interwoven hyphal cells, a brown hypodermal region (in KOH) and a hyaline cuticular layer of radial hyphae but these hyphae broad (6-12 μ) and non-gelatinous; clamp connections absent.

Habit, habitat and distribution: Single to scattered in grassy oak woods, Ann Arbor, Mich., Oct. 8, 1936, Sm.-5079.

Observations: The large spores, cheilocystidia and strong odor and taste are distinctive.

Rhodophyllus Sm.-33-1069

Pileus 9-15 mm. broad, broadly conic, scarcely expanding, surface dry innately oppressed fibrillose, not striate, color bright metallic golden yellow fading to yellowish gray to dingy olivaceous yellow; when dried cinereous; odor none, taste farinaceous; lamellae narrow to moderately broad, adnate becoming adnexed, subdistant, pale gray becoming flesh color; stipe 3-6 cm. long, 2-3 mm. thick, very brittle in thin carpophores, pallid gray fibrillose over all except the pruinose apex, hollow.

Spores 9-12 x 6.5-8 μ , angular-elliptic, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-42 x 9-12 μ , broadest below apex, content mostly homogeneous, some brown-walled bodies present giving appearance of collapsed basidia; gleurocystidia and cheilocystidia similar, scattered, 50-65 x 15-24 (30) μ , broadly fusoid with sharp-pointed apices, hyaline in KOH or with wall of pedicel brownish; gill trama of parallel hyphae, dull brown in KOH, subhymenium not distinctive; pileus trama homogeneous, surface hyphae with free end cells having bright yellow content (brown revived in KOH) walls ⁺ encrusted as seen revived, tramal body also brown in KOH, the color in the wall; clamp connections absent.

Habit, habitat, and distribution: Scattered on wet muck in low woods, Ann Arbor, Mich., Oct. 1, 1933, Sm.-33-1069.

Observations: This species is close to *R. dysthales*. The smaller spores and cystidia are distinctive.

Rhodophyllus Sm.-40010

Pileus 2-3 cm. broad, conic-umbonate to nearly papillate, $\frac{1}{2}$ horizontal to the decurved and somewhat incurved margin, glabrous, moist, hygrophanous, when moist near "wood brown" to $\frac{1}{2}$ "buffy brown", margin striatulate, fading to yellowish on disc and near pinkish buff to pale pinkish buff elsewhere; flesh thin, firm, pallid, odor slightly fragrant at first, taste somewhat disagreeable but not farinaceous; lamellae close, broad, depressed-adenate, pallid becoming dingy vinaceous; stipe 4-6 cm. long, 3-4 mm. at apex, slightly thicker downward, glabrous, naked, long-striate from splitting of the cuticle, yellowish-pallid and unchanging.

Spores 9-12 \times 6-8 μ , broadly angular-ovate to angular-elliptic, pale pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 40-48 \times 10-12 μ , content homogeneous to slightly granular; pleurocystidia scattered to rare, 60-85 \times 10-13 μ , ventricose at base and with a long narrow neck and subacute to obtuse apex, hyaline, thin-walled; cheilocystidia similar to pleurocystidia, scattered, gill trama parallel, hyaline to dull brown in KOH, subhymenium thin and not distinctive; pileus trama homogeneous; clamp connections absent.

Habit, habitat and distribution: Gregarious on a conifer log, Green Lake, Mt. Rainier National Park, Wash. Sept. 18, 1952, Sm.-40010.

Observations: The aspect is that of a small R. strictus. The long cystidia and lignicolous habit are distinctive.

Rhodophyllus Sm.-33-603 (Leptonia strictipes)

Pileus 1.5-3 cm. broad, obtusely campanulate, surface dry, innately furfuraceous to fibrillose, tending toward squamulose in age, evenly colored, "cocoa-brown" to "Pecan brown" or the disc near "Walnut brown"; not translucent striate (in any of the specimens collected); flesh thin, odor and taste not distinctive; lamellae close, broad, truncate-adenate (at times decurrent by a short faint line) pallid when young, then dingy flesh color, edges uneven and fimbriate; stipe 4-6 cm. long, 2-3 mm. thick, equal, glabrous, cartilaginous, evenly concolorous with pileus or a dingy vinaceous brown.

Spores 11-14 x 7-8.5 μ , angular-elliptic, the angles obscure to moderately prominent, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 32-37 x 10-12 μ , content of some oily-globular; pleurocystidia none; cheilocystidia narrowly clavate to subcylindric 26-40 x 6-10 μ , hyaline in KOH; gill trama parallel, hyaline in KOH or dingy ochraceous when first mounted; pileus trama homogeneous and dingy ochraceous in KOH, cuticular region of radial hyphae, free hyphal tips and hyphal end-cells present, dingy ochraceous in KOH; clamp connections none.

Habit, habitat, and distribution: Scattered on sphagnum, George Reserve, Pinckney, Mich., July 21, 1933, Sm.-33-603.

Observations: The dingy ochraceous color of the pileus trama in KOH is peculiar when considered in relation to the colors of the pileus when fresh. The colors when fresh are distinctive in the field.

Rhodophyllus Sm.-25726

Pileus 5-10 mm. broad, obtusely conic, expanding to plane or convex, surface moist and hygrophanous, fuscous on disc and near drab on margin, translucent-striate, when faded near "drab gray" and appearing unpolished; flesh very thin, dark brownish gray, odor foetid when flesh is crushed, taste mild; lamellae broad, distant, becoming ventricose, bluntly adnate to arcuate-decurrent, dark grayish brown, edges even; stipe 1.5-2.5 cm. long, 1-2.5 mm. thick, equal, dark like pileus (paler above), densely pruinose above, canescent from pallid fibrils lower down, base strigose with dingy brown mycelium.

Spores 11-14 x 6.5-8 μ , angular-elliptic, yellowish in Melzer's sol.; nearly hyaline in KOH; basidia four-spored, 36-44 x 9-12 μ , content of many oily-globular, collapsed basidia (40-60 μ long) often brownish in fresh material and as revived in KOH; pleurocystidia and cheilocystidia none; (except for brown bodies in hymenium); gill trama interwoven, dull brown in KOH; pileus trama dark brown in KOH and interwoven, paler toward cuticle but brown-walled hyphae present in cuticular zone also and fascicles of brown-walled end-cells (clavate to elliptic), the fascicles scattered and many hyaline hyphae of the same diameter (4-9 μ) visible on many sections, their arrangement essentially radial; clamp connections none.

Habit, habitat and distribution: Scattered on mossy sand bank, Middle Bridge, Lower Maize River, Cheboygan County, Mich., July 14, 1947, Sm.-25726.

Observations: This is near R. cysthales but the odor and gill characters are distinctive.

Rhodophyllus dysthales (Sm-39639)

Pileus 1-2 (3-4) cm. broad, obtuse to convex, rarely with the disc slightly depressed or flattened, surface moist and hygrophanous but also variously fibrillose-squamulose to pilose-squamulose, darker then "sepia" moist (near "mummy brown"), fading to near "snuff brown" or grayer, when moist margin obscurely translucent striate beneath the fibrils; flesh thin and fragile, odor and taste not distinctive; lamellae broad, ventricose, ascending adnate, subdistant, drab when young, finally pinkish from the spores, edges orenulate; stipe 3-5 (7-10) x (1.5) 2-4 (7-9) mm. equal or slightly enlarged downward, brittle, ± concolorous with pileus and like it covered with grayish to wood brown fibrills or the coating breaking up into squamules, apex pale avellaneous.

Spores 14-19 x 7-8.5 μ , angular-elliptic (considerably elongated) vinaceous in mass; basidia four-spored; 45-56 x 12-14 μ , content granular; pleurocystidia none seen; cheilocystidia vesiculose to clavate, 40-60 x 12-25 μ , walls brownish when fresh; gill trama of narrow, somewhat interwoven hyphae with brownish walls in H₂O fresh; pileus trama with brownish walls as in gill trama but outside a thick layer of variously enlarged cells (several or more deep) and with hyphae projecting as pilocystidia, these having large elliptic cells usually with pigment incrustated walls.

Habit, habitat and distribution: Gregarious on rich humus and rotten wood, hardwood forests, late summer and early fall.

Observations: Sm-39639 was used for microscopic details.

Rhodophyllus Sm-39641

Pileus 1-3 cm. broad, truncate-convex with a straight margin, expanding to broadly convex or plane with a very slight central depression, surface moist and hygrophanous watery gray (\pm like *Mycena cinerella*) conspicuously striate to disc dingy cinereous faded, over the disc minutely squamulose, marginal area glabrous or nearly so; flesh thin and fragile, watery gray, odor and taste not distinctive; lamellae broadly adnate, becoming very slightly decurrent at times, subdistant, broad and becoming ventricose, pale gray (concolorous with pileus) when young, finally vinaceous from the spores, edges even; stipe 3-7 cm. long, 1-2.5 mm. thick, equal, fragile, perfectly glabrous and naked, moist, concolorous with pileus or at apex a little paler.

Spores 9-12.5 x 7-8.5 μ , angular-ovate; basidia four-spored, 36-44 x 12-15 μ , content granular; pleurocystidia scattered to rare, 60-90 x 12-20 μ , fuscid ventricose, apices acute to subacute; cheilocystidia scattered smaller than pleurocystidia but similar in shape; gill trama subparallel, content of cells not granular; pileus trama homogeneous.

Habit, habitat and distribution: Gregarious on wet humus at edge of bog under cedar and other conifers, Mud Lake Bog, Cheb. Co., Mich. 8-14-52. AHS-39641.

Observations: Aspect of a *Mycena* in *Omphaliariae* but there the similarity stops. It is close but distinct from 39180 by spore size (larger) and shape and in the less decurrent gills.

Rhodophyllus Sm.-29236

Pileus 10-25 mm. broad, conic to broadly conic with an incurved margin, surface moist and hoary fibrillose, fading and then silky fibrillose, darker than "wood brown" moist, pallid with a yellowish tone faded; odor and taste none; lamellae ascending and nearly free, grayish when young, close to subdistant, narrow to moderately broad, grayish when young, then pink from spores; stipe 6-9 cm. long, 1.5-2 mm. thick, fragile, tinged with the color of the pileus beneath a hoary silky coating, fading to pallid and becoming longitudinally striate.

Spores 9-12 x 6-7 μ , angular-ovate, pink in KOH; basidia four-spored, 40 x 10 μ , content homogeneous; pleurocystidia scattered, 40-60 x 7-12 μ , narrowly ventricose at base and with a long neck 4-5 in diam. ending in an obtuse apex, smooth, thin-walled, hyaline in KOH; cheilocystidia similar to pleurocystidia; gill trama parallel, pale dingy yellowish in KOH; pileus trama homogeneous, scattered filaments 5-6 μ in diam. over the surface and occasional narrowly fusoid pilocystidia; clamp connections none.

Habit, habitat and distribution: Gregarious along trail of the Shaddows, Longmire, Wash., July 21, 1948, Sm.-29236.

Observations: The pleurocystidia and spores are distinctive in this group (mammosa group).

Rhodophyllus 39318-Sm

Pileus 3-4.5 cm. broad, obtusely conic, becoming convex to plane, umbo obsolete and disc not depressed, surface dry and fibrillose-squamulose, opaque, in age at times somewhat sulcate striate on margin, color on the disc "bister" or more nearly fuscous, marginal area with scaly "buffy brown" to a grayer brown scale from breaking up of cuticle, (almost mouse-color in some); flesh grayish brown, odor and taste not distinctive; lamellae close, moderately broad, adnate to depressed adnate, pale drab gray, becoming paler before pinkish from spores; edges uneven; stipe 6-10 cm. long, 2-4 mm at apex, subequal to evenly enlarged downward, surface coated with a thin layer of fibrils which break up more or less and is colored like the cuticle of the pileus.

Spores 9-12 x 7-8 μ , angular elliptic; basidia four-spored, 35-40 x 9-10 μ ; pleurocystidia none; cheilocystidia abundant, sub-cylindric, 40-70 x 8-10 μ , content granular; gill trama parallel, cells with granular content; pileus trama cells with granular content, cuticle of greatly elongated pileocystidia with smoky brown content and grouped into fascicles to form the scales.

Habit, habitat and distribution: Scattered under hardwood, Colonial Point Hardwoods, Burt Lake, Michigan, 7-25-52, A.H.S.-39318.

Observations: A strict opeaus, of the Entoloma type. Compare with a previous number with some type of fibrillose coating on stipe.

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Rhodophyllus Sm.-29686

Pileus 3-4.5 cm. broad, conic-campanulate, surface yellowish gray and squamulose, (apparently faded when collected), flesh thin, fragile, odor and taste not distinctive; lamellae close, narrow, ascending adnate, color grayish brown; stipe 4-6 cm. long, 2-3 mm. thick at apex, fragile, slightly enlarged downward, surface densely pruinose above from caulocystidia, white fibrillose below.

Spores 9-12 x 6-7.5 (8) μ , angular-elliptic, pink in KOH; basidia 40-50 x 10-12 μ , four-spored; pleurocystidia none (or near edge and similar to cheilocystidia); cheilocystidia 50-70 x 9-13 μ narrowly ventricose with a long narrow (3-5 μ) neck and subacute to slightly enlarged apex, hyaline in KOH, thin-walled; gill trama subparallel, dingy ochraceous brown in KOH; pileus trama colored like gill trama or darker (in KOH), with subcylindric to clavate hyphal tips projecting (to cause furfuraceousness); clamp connections very rare.

Habit, habitat and distribution: Scattered along a trail, Mazoma Ridge, Mt. Rainier National Park, Wash., July 30, 1942, Sm.-29686.

Observations: Clearly in section Nolanea.

Pileus 10-13 mm. broad, convex with a papillate umbo, expanding to nearly plano-umbonate, glabrous, hygrophanous, "Saccardo's umber" fading to near "cinnamon buff", (youngest cap near "mummy brown"), becoming faintly translucent striate before fading, flesh concolorous with surface, odor none, taste slight and not distinctive; lamellae dark gray, becoming pale gray and thin "avellaneous", broadly adnate becoming distinctly arcuate and finally decurrent, subdistant, broad, edges even; stipe 3-5 cm. long, 1.5 mm. thick, equal, flexuous, cartilaginous, dark grayish brown above, (darker than cap), paler at base (from white mycelium), pruinose above, midportion faintly canescent from scattered appressed grayish fibrils.

Spores $6-6.5 \times 3.5 \mu$, minutely roughened (use oil immersion), narrowly elliptic to subfusiform, hyaline in KOH, hyaline in Melzer's sol.; basidia four-spored; pleurocystidia $26-38 \times 5-9 \mu$, fusoid and with granular content when fresh, yellowish revived in Melzer's sol.; and with only a few globules; cheilocystidia similar to pleurocystidia, gill trama interwoven, pale cinnamon tan in KOH; pileus trama homogeneous, pale cinnamon in KOH; clamp connections absent.

Habit, habitat and distribution: Gregarious on humus under alder, Oct. 7, 1946, Sm.-24239.

Observations:

Rhodophyllus chalybaceus? Sm.-32-414

Pileus 1.5-3 cm. broad, obtusely campanulate with a slightly depressed disc, surface dry and innately fibrillose, not striate, evenly deep bluish black, scarcely fading; lamellae close to subdistant, very thin, adnate, seceding, not ventricose, tapering evenly to cap margin, pale watery bluish before becoming vinaceous, edges eroded and whitish; stipe 4-6 cm. long, 3-4 mm. thick, covered by a gray coating of fibrils, whitish at base, concolorous with pileus beneath the fibrils, often compressed.

Spores 8-10 x 5.5-7 μ , angular-ovate, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 23-28 x 7-9 μ , hyaline and homogeneous in KOH; pleurocystidia present as pseudocystidia (ends of laticiferous hyphae), clavate and resembling basidioles in size or larger (30-40 x 7-10 μ) and subcylindric, when revived in KOH with a brilliant purple⁺ amorphous content; cheilocystidia similar to pleurocystidia, some with purple content and others hyaline (as revived in KOH); gill trama somewhat interwoven, \pm hyaline; many hyphae with oily content; pileus trama with a cuticle of hyphae 8-15 μ , broad with smoky brown content in KOH and many free end-cells, clavate to cylindric, as pileocystidia; laticiferous hyphae abundant in gill and cap trama, bright purple to purple-red revived in KOH, blackish blue in Melzer's sol.; no clamp connections present.

Habit, habitat and distribution: Gregarious on wet soil in low woods, Lakeland, Mich., Sept. 14, 1932, Sm.-32-414.

Observations: In all other species studied so far laticiferous hyphae have been present but in none was such a

(more)

Rhodophyllus sericellus (Sm-39189).

Pileus 1-2.5 (3) cm. broad, obtusely conic with an inrolled margin, expanding to broadly conic and somewhat papillate at times, surface shining white and unpolished at first soon pinkish cream as spores mature, not truly hygrophanous-opaque, sometimes belted near the margin, margin often lobed to crenate; flesh thin, white, almost waxy, odor and taste not distinctive; lamellae ascending adnate, broad, close to subdistant, white at first, becoming a delicate pink, edges soon eroded; stipe 3-6 cm. long, 1-3 mm. thick at apex, equal or a little thicker downward, white and shining, glabrous, no veil seen.

Spores 8-11 x 6-7 μ , angular-tuberculate, angles not prominent, elliptic in outline; basidia four-spored, 30-35 x 9-10 μ ; pleurocystidia submucronate 40-46 x 10-14 μ , scarcely projecting, rare; cheilocystidia scattered 28-62 x 9-12 μ , fusoid-ventricose to greatly elongated and then subcylindric; gill trama subparallel; pileus trama interwoven, outicular area over laid with hyphae giving rise to end cells which may be somewhat cystidium-like; clamp connections present but rare.

Habit, habitat and distribution: Scattered in wet places, hardwood and conifer forests, summer and fall. Sm.39189, Pellston, Michigan hills, 7-20-52.

Observations: This is a beautiful snowwhite species which becomes pinkish in age. The ascending gills remove it from the R. albogriseus group.

Rhodophyllus - Sm-39194

Pileus 10-15 mm. broad, obtusely conic with an incurved margin, becoming broadly conic, surface moist and hygrophanous but hoary and dry-appearing at first, "tilleul buff" to "avellaneous", fading to whitish on disc and silvery toward margin; flesh pallid, thin but not fragile, odor faintly fragrant, taste slightly disagreeable; lamellae ascending-adnate and ventricose, close to subdistant, white becoming pale pink, edges even; stipe 3-5 cm. long, 1-2 mm. thick, equal, naked and glabrous except for faint pruinosity at apex, when young violaceous-brownish umber, darker at apex, fading to dingy brownish.

Spores 7-8.5 x 5-6 μ , angular-elliptic, angles obscure; basidia 30-38 x 9-11 μ , four-spored; pleurocystidia rare, 30-45 x 12-18 μ , imbedded in hymenium; cheilocystidia rare and like the pleurocystidia, gill trama parallel, hyaline, no granules; pileus trama hyaline and homogeneous; no clamp connections seen.

Habit, habitat and distribution: Gregarious on very decayed log and humus near by, Pellston Hardwoods, 7-20-52, Sm-39194.

Observations: This fungus is very close to Sm 39193 but did not develop yellow tints to the pileus and the stem was darker than the cap. There is a distinct difference in the spacing of the gills also.

Rhodophyllus Sm.-40728

Pileus 1-2.5 cm. broad, convex expanding to plane or nearly so, surface moist, hygrophanous, dark drab when moist, pale drab faded and then appearing matted-fibrillose; flesh thin, whitish, odor and taste not distinctive; lamellae close, decurrent, narrow (broadest in mid portion but arcuate), pale cinereous becoming vinaceous, edges crenulate; stipe 2-3 cm. long, 1.5-2 mm. thick, equal, pruinose above, at first with a hoary-cinereous coating of fibrils, fibrils disappearing leaving the color a dull gray-brown.

Spores 6.5-8 x 5-7 μ , dingy vinaceous in deposit, broadly ellipsoid to subglobose, in H₂O mounts of fresh material very faintly angular, when revived in KOH angularity scarcely noticeable, hyaline in KOH, yellowish in iodine; basidia four-spored 28-34 x 8-9 μ , content $\frac{1}{2}$ glo-bular before sporulation; pleurocystidia similar to cheilocystidia; cheilocystidia scattered to abundant, fusoid-ventricose to subclavate 30-46 x 8-12 μ , many with secondary septa, some forked near apex; gill trama $\frac{1}{2}$ interwoven, hyaline in KOH, the hyphal cells short and narrow, subhymenium not distinctive; pileus with a cuticle of narrow, appressed pigment incrustated hyphae (snuff brown in H₂O fresh and fuscous revived in KOH), paler toward subhymenium, some cystidioid hyphal end-cells present; no clamp connections seen.

Habit, habitat and distribution: Single to scattered on thin moss cover over gravel outwash, Carbon River, Mt. Rainier National Park, Wash., Oct. 9, 1952, Nancy June Smith. (Sm.-40728).

(more)

Observations: The septate cystidia, obscurely angular spores, and lack of clamp connections are distinctive.

Rhodophyllus Sm-39236.

Pileus 10-15 mm. broad, conic with a straight margin, expanding to broadly conic, at times papillate, surface glabrous, moist, hygrophanous, near fuscous on disc (dark), gray brown over marginal area, translucent striate nearly to disc; flesh thin, odor and taste not distinctive; lamellae pallid brownish gray becoming vinaceous, close, broad, ascending-adnate, margins even; stipe 3-4 cm. long, \pm 1 mm. thick, equal or nearly so, glabrous, naked, moist, \pm concolorous with margin of pileus, same color throughout.

Spores 7-9 x 6-7 μ , angular-elliptic; basidia four spored 34-40 x 9-11 μ , content granular when young; pleurocystidia scattered, 46-58 x 12-18 μ , ventricose with acute apices and narrow necks, hyaline, thin-walled; cheilocystidia 30-60 x 9-15 μ , fusoid-ventricose with subacute apices and fairly broad necks, hyaline; gill trama subparallel, hyaline; pileus trama homogeneous, the cuticular hyphae merely more compactly arranged.

Habit, habitat and distribution: Scattered on black humus (old log) in a barren area, Pellston Hardwoods, 7-23-52. Sm-39236.

Observations: A species of the *Nolanea* group characterized by dull colors and acute-pleurocystidia.

Rhodophyllus Sm.-16167

Pileus 1-2 cm. broad, obtusely conic expanding to nearly plane except for the low conic umbo, margin incurved at first, sometimes broadly conic in age, surface dry, opaque, fibrillose-squamulose from beginning or merely furfuraceous, color \pm "olive-brown" over all or disc "mummy brown" (a dull grayish brown paler than R. dysthales; flesh thin, grayish watery brown becoming pallid, odor and taste not distinctive; lamellae moderately close (24-30 reach stipe), 2-3 tiers of lamellulae, narrowly and deeply adnexed, "wood brown" young, "vinaceous brown" in age from spores, margin even or slightly serrate and fimbriate; stipe 3-6 cm. long, 2-3 mm. thick at apex, 3-4 mm. at base, solid becoming hollow, base coated with whitish mycelium, longitudinally striate above and pruinose toward apex, concolorous with the pileus.

Spores 7-9 \times 6-7 μ , angular-ovate, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 \times 8-9 μ , content homogeneous; pleurocystidia none; cheilocystidia abundant, tibiiform (as in Galerina tibilocystes) 36-50 \times 4-9 μ , cylindric-capitate to \pm ventricose at base and with a long neck ending in a capitellum 4-6 μ in diam. some fusoid-ventricose cells with merely obtuse apices also present; gill trama parallel, dingy brownish in KOH; pileus trama homogeneous and brownish to hyaline beneath a cuticle of hyphae 10-20 μ in diam. with smoky brown contents and giving rise to a turf of hyphal tips arranged in a semi-upright position, their contents also smoky brown, no clamps at cross-walls of these hyphae or on any other hyphae of the carpophore.

(more)

Sm.-16167

Habit, habitat and distribution: Gregarious on humus,
Maple Creek Forest Camp, Rockport, Wash., Aug. 15, 1941,

Sm.-16167.

Observations: The gray brown furfuraceous pileus,
capitate cheilocystidia and small spores and striate stipe
are distinctive.

Rhodophyllus 39275-Sm.

Pileus 10-15 mm. broad, obtusely conic, expanding to broadly conic, surface glabrous, moist, hygrophanous, dull fuliginous brown moist and then translucent striate, fading to near mouse gray to dark cinereous, radially silky faded; flesh thin and fragile, odor and taste not distinctive; lamellae ascending and attached only at apex of stipe, or if adnate soon seceding, broad and ventricose, subdistant, gray-brown like the pileus, edges even; stipe 3-4 cm. long, 1-1.5 mm. thick, equal, glabrous and naked, concolorous with pileus.

Spores 8-11 x 7-8.5 μ , angular-ellipsoid to angular subglobose; basidia four-spored, 34-40 x 10-12 μ , content granular when young; pleurocystidia none seen; cheilocystidia abundant, clavate to sub-vesiculose, 30-42 x 12-24 μ , hyaline, thin-walled; some fusoid-ventricose cells 18-26 x 7-10 μ also present; gill trama of parallel hyphae, walls brownish; pileus trama homogeneous, cuticle of radial hyphae, walls brownish.

Habit, habitat and distribution: Gregarious on sandy soil in climax hardwoods, Tahquamenon State Park, 7-24-52, A. H. S. 39275.

Observations: This is a *Mycena*-like species in color and stature distinguished microscopically by the very large clavate cheilocystidia.

Rhodophyllus Sm.-29152

Pileus 2.5 cm. broad, plano-umbonate, the umbo obtuse, surface dry, minutely fibrillose-furfuraceous, "drab" to "drab gray"; flesh grayish, odor and taste not distinctive; lamellae broad, sinuate, close, grayish then flesh colored, edges slightly eroded; stipe 4 cm. long, 4 mm. at apex, thickened slightly toward base, hollow, cortex pallid, surface minutely fibrillose to fibrillose-furfuraceous, pallid but toward base with an obscure violaceous gray shade.

Spores 8-10 \times 5-6 μ , angular elliptic, angles not prominent, nearly hyaline in KOH (pinkish in a zone near wall), yellow in Melzer's sol.; basidia four-spored, 36-42 \times 10-12 μ , some with oily-granular content; pleurocystidia none; cheilocystidia scattered, 48-56 \times 9-13 μ \pm elliptic-ventricose with a narrowed neck and acute to \pm subcapitate or oval-enlargement at apex, hyaline, thin-walled, smooth; gill trama parallel, hyaline or nearly so in KOH; pileus trama hyaline and homogeneous beneath a cuticular region of a tangled turf of pileocystidia \pm clavate and with smoky brown content; laticiferous hyphae highly refractive and very numerous; no clamp connections seen.

Habit, habitat and distribution: Single on humus in an alder flat, Takoma Creek, Mt. Rainier National Park, Wash., Sm.-29152.

Observations: The dry fibrillose-furfuraceous pileus, drab color, and cheilocystidia are distinctive.

Rhodophyllus Sm.-16230 (but compare sericellus which also has cheilocysts.)

Pileus 1-2.5 cm. broad, convex, surface dry, opaque, under a lens minutely fibrillose and in a few furfuraceous to squamulose, margin apparently straight at first, white with a yellowish tint on the disc, in age discoloring to near cinnamon buff; flesh thin but firm, white, odor and taste not distinctive; lamellae bluntly adnate with a tooth to sinuate, broad and ventricose, subdistant, 2 tiers of lamellulae, white becoming pink, edges even; stipe 1-2 cm. long, 1-2.5 mm. thick, sometimes eccentric, solid, equal, white; at first faintly furfuraceous, glabrous in age.

Spores 7-9 x 6-8 μ , angular-ovate in side view apiculus oblique, angular-elliptic in face view, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 34-38 x 8-9 μ , content homogeneous or nearly so; pleurocystidia none; cheilocystidia scattered to abundant, 38-55 x 7-11 μ , narrowly clavate to narrowly ventricose with obtuse apices, some subcylindric with subcapitate apices; gill trama parallel, hyaline; subhymenium not distinctive; pileus trama homogeneous, hyaline, none of the hyphae greatly enlarged; clamp connections present.

Habit, habitat and distribution: Gregarious on a wet bank, Ruth Mt., Mt. Baker National Forest, Wash., Aug. 17, 1941, Sm.-16230.

Observations:

Rhodophyllus Sm.-16230

Pileus 1-4 cm. broad, convex, surface dry, opaque, under a lens minutely fibrillose, and in a few furfuraceous or almost scaly, margin apparently straight at first, white except for a yellowish tint on the disc, in age pale brownish (near "cinnamon buff"); flesh thin but firm white, odor and taste none; lamellae bluntly adnate are finally sinuate, broad and ventricose, subdistant, 2 tiers of lamelliulae, white then pink, edges even; stipe short 1-1.5 (2.5) cm., 1.5-3 mm. thick, solid, equal, white at first faintly furfuraceous, glabrous in age.

Spores 8-10.5 x 6-8 μ , broadly angular-elliptic, pink in KOH; basidia four-spored, 35-40 x 10-11 μ , content homogeneous; pleurocystidia none; cheilocystidia filamentous or somewhat ventricose, 35-48 x 8-12 μ , (mostly \pm 8 μ thick and filamentous); gill trama parallel, hyaline; pileus trama homogeneous and hyaline but surface with free cystidioid hyphal tips of various sizes and shapes; clamp connections none.

Habit, habitat and distribution: Gregarious in wet mountain meadow, Ruth Mt., Cascade Mts., Wash., Aug. 17, 1941, Sm.-16230.

Rhodophyllus Sm.-3056

Pileus 1.5-3 cm. broad, broadly convex with an incurved margin with or without a small conic umbo, in age plane or broadly convex with the small conic umbo, glabrous under a lens, moist, dark brown (near "mummy brown" to "Hatal brown") and faintly striate over margin, sometimes crenate to plicate or wavy in age; flesh of uniform thickness (± 1 mm.) except in disc, rather firm, dark brown, odor and taste slight but penetrating; lamellae close, moderately broad, rounded-adenate, seceding, edge even; dark grayish becoming dull flesh color; stipe 4-8 cm. long, 2-4 mm. thick, strict, equal, very brittle, "bister" beneath a coat of gray fibrils which gives it a silvery sheen, longitudinally fibrous-striate below, fibrillate-pruinose above, loosely stuffed by a pale gray pith.

Spores 9-11 \times 5.5-7 μ , angular-elliptic, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 24-28 \times 9-10 μ , content homogeneous; pleurocystidia none; cheilocystidia scattered, subcylindric to subventricose, apices obtuse and walls often flexuous; gill trama parallel, brownish in KOH, subhymenium not distinctive; pileus trama homogeneous, mid-portion dark brown in KOH, paler toward cap surface, hyphae of cuticular region radial and of various sizes; clamp connections present but rare.

Habit, habitat and distribution: Gregarious along highway on soil, Lake Crescent, Wash., Oct. 9, 1935, Sm.-3056.

Observations: One of the slender species of "Entoloma".

Rhodophyllus -Sm.-9856

Pileus 1-3 cm. broad, conic to campanulate, becoming broadly campanulate with a prominent mammillate umbo, the margin incurved at first and wavy to crenate at maturity, color watery avellaneous or darker (near "wood brown") when moist, at times faintly striatulate, pallid and silky shining when dry--almost silvery, at times with inconspicuous concentric zones along the decurved margin; flesh avellaneous, thin, firm, odor and taste mild to slightly farinaceous; lamellae crowded, narrow, adnate, soon seceding, gray but becoming dull flesh color, edges even; stipe 5-7 cm. long, (1) 2-3 mm. thick, equal, rigid and firm, terete or compressed, apex fibrillose-punctate, glabrous and naked below, base with appressed white mycelium, evenly dull dark gray.

Spores 8-10 x 6-8 μ , angular-elliptic, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 23-34 x 8-9 μ , content ¹ homogeneous; pleurocystidia none seen; cheilocystidia scattered to rare narrowly fusoids to subcylindric 34-46 x 6-9 μ ; gill trama of narrow parallel, hyaline hyphae many with globular content, subhymenium thin and interwoven; pileus trama homogeneous, surface with numerous filamentose to narrowly clavate often flexuous pilocystidia 3-6 μ diam. and of various lengths, all hyaline in KOH and thin walled; clamp connections absent.

Habit, habitat, and distribution: Under hardwoods at Coon's Hollow, Great Smoky Mts. National Park, Tenn. Aug. 7, 1938, Coll. L. R. Hesler, (Sm.-9856)

Observations: The pilocystidia and cheilocystidia are distinctive in this group.

Rhodophyllus Sm.-40358

Pileus 1.5-3 cm. broad, obtuse to convex, nearly plane in age, glabrous, lubricous, hygrophanous, color evenly fuscous to fuliginous varying toward wood brown (colors I as in Mycena megaspora), fading in streaks to dingy gray-brown but finally cinereous; flesh concolorous with surface, rigid-cartilaginous (as in Mycena megaspora), odor and taste mild; lamellae close, broad and ventricose, adnate-seceding, pale dingy gray, rigid and semiwaxy, thickish edges even; stipe 3-5 cm. long, 1.5-2.5 (3) mm. thick. equal, cartilaginous (as in M. megaspora), naked, moist, slightly paler than pileus.

Spores 8-9 x 6-7 μ , broadly angular-elliptic to angular-ovate, scarcely pink in KOH (very faint), yellowish in Melzer's sol.; basidia four-spored, 38-46 x 10-12 μ , clavate, with gibular content; pleurocystidia none seen; cheilocystidia basidioid to clavate-saccate, scattered, 35-45 x 10-18 μ , pale yellowish revived in KOH; gill trama parallel, pallid to brownish in KOH; pileus trama with a thin somewhat gelatinous pellicle of narrow (3-5 μ) hyphae with colored content (as revived in KOH) beneath this the tissue floccose and interwoven; clamp connections present.

Habit, habitat and distribution: Gregarious on moss, Snow Lake, Mt. Rainier Nat. Park, Wash., Sept. 30, 1952, Sm.-40350.

Observations: The similarity in aspect to Mycena megaspora is striking. The cheilocystidia are merely enlarged basidioles.

Rhodophyllus Sm.-17502

Pileus 2.5-3.5 (4) cm. broad, obtusely conic to convex, the margin straight at first, remaining broadly convex or the margin flaring, surface glabrous, moist, hygrophanous, color "Saccardo's umber" over all except the darker (near "mummy brown") disc, faintly translucent striate when moist, fading slowly to a pale dingy olive buff; flesh thin and equal, cartilaginous, pliant, concolorous with surface, odor none, taste mild or faintly farinaceous; lamellae only moderately close, moderately broad and \pm equal, becoming ventricose only in age, ascending-adsate, often slightly toothed, concolorous with pileus or a paler olivaceous gray-brown, becoming dingy vinaceous, edges \pm even; stipe 5-7 cm. long, 3-5 mm. thick, terete or compressed, tubular or hollow, equal, glabrous and polished, concolorous with pileus, very rigid and cartilaginous.

Spores 8-10 \times 6-8 μ , angular-subglobose, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 38-44 \times 7-9 μ (long and narrow!), content homogeneous; pleurocystidia none; cheilocystidia fusoid-ventricose 30-46 \times 7-10 μ , with a flexuous neck ending in a subacute apex, scattered to rare; gill trama parallel, hyaline to brownish in KOH, subhymenium thin, not distinctive; pileus trama hyaline and homogeneous beneath a fairly thick pellicle of radial and subgelatinous (in KOH) hyphae with colored content; clamp connections present.

Habit, habitat and distribution: Gregarious under conifers, Olympic Hot Springs, Olympic National Park, Wash., Oct. 2, 1941, Sm.-17502.

(more)

Observations: The consistency is about like that of Mycena megaspora. The color, cheilocystidia, subglobose spores, polished stipe and consistency are diagnostic.

Key to Divisions of

Subsection G

1. Spores 10-12 μ or longer or 9-12 \times 8-11 μ . . .

. . . Division Macrospora (103-108)

1. Spores smaller 2

2. Surface of pileus dry, fibrillose to

squamulose, if subhygrophanous distinctly

innately fibrillose also Division Squamulosae 110-120

2. Pileus typically glabrous, moist,

hygrophanous Division Udae

(127-156)

Key to Species of
Division Macrosporae of
Subsection G

1. Odor or taste farinaceous or otherwise distinctive 2
1. Odor and taste not distinctive 5
 2. Both odor and taste resembling that of spoiled
garlic; pileus dry and fibrillose 103. R. Sm-32-460
 2. Not as above 3
3. Odor foetid; taste mild; base of stipe strigose
with dingy brown mycelium 83. R. Sm-25726
3. Not as above 4
 4. Lamellae narrow; spores 10-12 x 7-8 μ . . . 104. R. Sm-13118
 4. Lamellae broad; spores 10-13 x 6-7.5 μ . . 105. R. Sm-39958
5. Pileus cuspidate; yellow or salmon color. 6
5. Pileus obtusely conic, \pm fuscous to brown 7
 6. Pileus clear yellow 106. R. cuspidatus (R. Sm-39278)
 6. Pileus salmon color 107. R. salmonius
7. Pileus dry and fibrillose or finally squamulose. . .
. . . . 108. R. Sm-37566
7. Pileus moist, hygrophanous, glabrous, faded. . 109. R. Sm-29235

Rhodophyllus Sm.-32-460.

Pileus 1-2 cm. broad, convex expanding to nearly plane evenly "light drab" and innately grayish fibrillose, with a cinereous cast young, becoming furfuraceous in age, usually opaque (one slightly striatulate), some with radial ridges and grooves; flesh thin, pallid, odor and taste resembling that of spoiled garlic or something worse; lamellae distant, broad, broadly adnate and decurrent hyaline, concolorous with pileus (gray) becoming tinged flesh color from spores; stipe 3-5 cm. long, 1-2 mm. thick, grayish like the pileus, fibrillose-striate and densely white mealy at apex, tubular.

Spores 11-15 x 7-8.5 μ , angular-elliptic, pinkish in KOH, yellowish in iodine; basidia four-spored, 26-35 x 9-11 μ , content homogeneous; pleurocystidia imbedded in hymenium, 25-36 x 8-12 μ , dark brown, clavate, brown when revived in KOH and Melzer's sol. (color in the wall as seen in revived material--but when fresh the content \pm colored) the collapsed basidia also turn ochraceous; cheilocystidia none; gill trama bister in KOH and interwoven; pileus trama bister in KOH beneath a paler surface layer of non-gelatinous radial hyphae giving rise to numerous bundles of hyphal tips (\pm cystidium-like end cells) but only faintly colored and apices obtuse; no clamp connections present.

Habit, habitat, and distribution: Scattered under an elm stump, Stockbridge, Mich., Sept. 21, 1932, Sm.-32-460.

Observations: The vile taste and odor, furfuraceous pileus, broad distant gills, large spores and dark brown elements in the hymenium are distinctive.

Rhodophyllus Sm.-13118

Pileus 3-6 cm. broad, obtusely to sharply conic, becoming broadly convex-umbonate or expanded-umbonate, surface glabrous, moist, translucent-striate when fresh, opaque when faded, hygrophanous, color "snuff brown" at first, becoming nearly "buffy brown" before fading to "cartridge buff" or "pale olive buff"; flesh thin, concolorous with surface, odor sharply fragrant (somewhat nitrous), soon fading, taste mild; lamellae close (29-31 reach stipe) narrow (3-4 mm.), free or attached by a line, near "tawny olive" but duller when young, "avellaneous" or more vinaceous at maturity, edges eroded; stipe 8-12 cm. long, 3-5 mm. thick at apex, enlarged downward or equal, hollow, fragile, near "pinkish buff" but at first conspicuously longitudinally fibrillose striate over all with appressed fibrils, glabrescent and translucent, dull brownish over all in age, very strict.

Spores 10-12 x 7-8 μ , angular-elliptic to angular-ovate, pink in KOH, yellowish in Melzer's sol.; basidia four-spored 30-35 x 9-10 μ , content homogeneous; pleurocystidia none; cheilocystidia none or rarely a few hairs 25-30 x 3 μ among the basidia; gill trama parallel, subhymenium not distinctive; pileus trama homogeneous, surface hyphae radial and of various widths; clamp connections present but rare.

Habit, habitat and distribution: Gregarious to scattered under spruce, Cape Flattery, Wash., May 5, 1959, Sm.-13118.

Observations: This is in the *R. striatus* group.

Rhodophyllus Sm.-39958

Pileus 2.5 cm. broad, conic-campanulate, glabrous, moist, hygrophanous, near "buffy brown" fading to pale gray, margin striatulate when moist; flesh thin, pallid faded, concolorous with surface moist, odor and taste farinaceous; lamellae close, broad, ascending adnate to nearly free, pallid to grayish, becoming pink, edges eroded; stipe 7 cm. long, 3 mm. thick at apex, slightly thicker below, glabrous, faintly longitudinally striate, paler than moist pileus but in buff brown series.

Spores 10-13 x 6-7.5 (8) μ , narrowly angular-elliptic, pink in KOH, yellow in Melzer's sol.; basidia four-spored, content somewhat globular, 30-38 x 9-10 μ ; pleurocystidia and cheilocystidia none; gill trama parallel, brownish to hyaline in KOH; pileus trama with a cuticle of slightly thicker hyphae than in trama proper and brownish in KOH, many narrow hyaline hyphae over surface with free, clavate end cells but these not organized into a turf or a pellicle; clamp connections absent.

Habit, habitat and distribution: Single on humus, Carbon River, Mt. Rainier National Park, Wash., Sept. 16, 1952, Sm.-39958.

Observations: The long narrow spores are distinctive along with the odor and taste.

Rhodophyllus Sm-39278 (cuspidatus)

Pileus 10-25 mm. broad, cuspidate to merely conic young, remaining conic to cuspidate, umbo often a prolonged papilla, surface glabrous, moist, hygrophanous, "mustard yellow" and faintly translucent striate moist, fading to paler yellow and becoming opaque, usually fading on disc first; flesh thin fragile, yellow, odor and taste none; lamellae ascending-adnate, subdistant to close, pale yellow; stipe 5-10 cm. long, (2)3-6 mm. thick, equal, usually longitudinally fibrillose striate and often twisted, concolorous with pileus and fading to whitish yellow but not discoloring.

Spores 9-11 x 8-10 μ , angular-globose (quadrate in optical section; basidia 48-60 x 12-15 μ , four-spored, content granular at first; pleurocystidia and cheilocystidia none seen; gill trama subparallel, content granular; pileus trama homogeneous.

Habit, habitat and distribution: Scattered on humus in rich woods, Tahquamenon State Park, Michigan, July 24, 1952, Sm-39278.

Observations: The clear wax yellow color of all parts is distinctive along with the quadrate spores. It is close to R. salmoneus in other characters than color.

Rhodophyllus salmoneus (Pk.) Singer

Pileus 1-4 cm. broad, sharply conic to cuspidate or occasionally merely broadly conic, margin straight at first, usually remaining broadly conic, at times campanulate, surface glabrous and moist, translucent-striate, "ochraceous salmon" to "zinc orange" (salmon yellow), hygrophanous, fading to a yellower shade; flesh thin, salmon-color, fragile, odor and taste not distinctive; lamellae close, broad, ascending and narrowly attached at apex of stipe; stipe 4-10 cm. long, 1.5-4 mm. thick, equal, hollow, fragile, faintly longitudinally fibrillose-striate but appearing glabrous to naked eye, concolorous or nearly so with pileus, base with appressed white mycelium.

Spores flesh color in deposit, 9-12.5 μ in diameter, angular-quadrate, but often quite irregular; basidia 1-, 2-, or 4-spored, 40-55 x 12-15 μ , usually with finely globular content; pleuro- and cheilocystidia none seen; gill trama parallel, cells with finely globular to granular content; pileus trama homogeneous, cells of cuticular region radial in arrangement, clamp connections absent to rare (present as false clamps?).

Habit, habitat and distribution: Single to gregarious on rich humus in moist conifer and hardwoods, often in bogs; summer and fall; usually uncommon but abundant in the northern regions during some wet seasons.

Observations: This species and *R. cuspidatus* differ in the color of the fruiting body. In other respects they are very similar.

Material studied: Sm-39177-desc.

Pileus 2-3 cm. broad, obtusely conic and scarcely expanding, surface dry and appressed fibrillose, \pm squamulose in age, "fuscous" on disc, "drab" over remainder, margin bent in only slightly; flesh grayish, firm, not brittle, odor and taste not distinctive; lamellae close, narrow, ascending adnate or with a decurrent tooth, pale gray (with an avellaneous cast), edges uneven; stipe 8-11 cm. long 2.5-4 mm. at apex, evenly enlarged downward, pallid within, fibrillose in texture and readily splitting lengthwise when broken, surface drab gray from a coating of fibrils, near apex the layer separating somewhat (but not becoming scaly), lower portion gray-fibrillose, base with white mycelium.

Spores 9-12 \times 6-7 μ , angular-elliptic nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-44 \times 9-11 μ , content \pm globular and many oil globules visible free in mount; pleurocystidia none; cheilocystidia none or present as scattered filaments about as long as basidia or projecting slightly; gill trama parallel, cells with globular content; pileus trama with a cuticle of elongate pileocystidia arranged \pm in a turf, the cells with smoky brown content in KOH and cylindric to subfusoid in shape, but mostly narrowly clavate, flesh beneath brownish to hyaline, homogeneous, cells with oily content; clamp connections none.

Habit, habitat and distribution: Closely gregarious under second growth hardwood, Pellston Hills, Pellston, Mich., August 10, 1951. Sm.-37566.

(more)

Observations: The drab, fibrillose stipe is distinctive along with the dry pileus and slender stipe.

Rhodophyllus Sm.-29235 (staurospora group)

Pileus 1-3 cm. broad, obtusely conic expanding to nearly plane, surface, glabrous, near "snuff brown" on disc; paler on margin, translucent striate, fading to ashy-avellaneous with an ochre tone dried; odor and taste none; lamellae close, moderately broad, adnate, nearly concolorous with pileus but finally vinaceous from spores; stipe dingy honey color, 5-7 cm. x 1.5-2 mm, longitudinally striate, becomes grayish at base.

Spores 9-12 μ , angular-globose or rhomboid-nodulose, the corners produced into nodules, pink in KOH; basidia four-spored, 10-12 μ broad, very soft and soon disintegrating in KOH; pleurocystidia and cheilocystidia none; gill trama interwoven and very soft, disintegrating in KOH; pileus trama dingy yellowish brown, with a cuticle of appressed radial hyphae 20-40 μ in diam. (hence in sections cuticle appearing Peathyrella-like); clamps none as far as could be determined.

Habit, habitat and distribution: Gregarious on Trail of the Shadows, Longmire, Wash., July 21, 1948, Sm.-29235.

Observations: The tissues are the softest I have ever encountered in a Rhodophyllus. The spores place it in the staurospora group.

Key to species of
Division Squamulosae of
Subsection G

1. Stipe violaceous at least when young 2
1. Stipe some other color 10
 2. Lamellae whitish with purplish gray margins;
taste spermatio 110. R. Sm-14733
 2. Not as above. 3
 3. Lamellae when young bluish gray to violaceous 4
 3. Lamellae pallid to white before colored by spores 5
 4. Stipe naked 111. R. Sm-30915
 4. Stipe coated with violaceous fibrils. 112. R. Sm-8637
 5. Pileus "buffy brown" 113. R. Sm-32-461
 5. Pileus some shade of blue or violet. 6
 6. Spores 6-7.5 μ , angular globose. 114. R. Sm-16590
 6. Spores 8-11 x 5-7.5 μ 7
 7. Pileus surface lacking hyphal end-cells as
pilocystidia (hyphae of surface all appressed) . . .
. . . 115. R. coelestinus var. violaceus
 7. Pileus with hyphal tips present as pilocystidia 8
 8. Spores obscurely angular. 116. R. Sm-19835
 8. Spores distinctly angular 9.
 9. Stipe naked and glabrous 117. R. Sm-33-928 ^{*coelestinus*}
 9. Stipe \pm squamulose 123. R. Sm-39339
 10. Spores 6-7 x 4-5.5 μ 11
 10. Spores larger 12

11. Spores ± obscurely angular; stipe yellowish. 118. R. Sm-11111
11. Spores angular; stipe fuscous 119. R. Sm-29963
 12. Pileus convex, drab to gray. 13
 12. Pileus conic or conic umbonate 14
13. Stipe 5-20 mm. long, often eccentric, base with white rhizomorphs. . . 120. R. bysalsedus (Sm-39677)
13. Stipe 4-7 cm. long, rhizomorphs not characteristic 121. R. Sm-10015
 14. Pileus "wood brown", slowly fading to whitish, surface moist beneath a delicate silky fibrillose coating. 122. R. Sm-39447
 14. Not as above 15
15. Cuticle with clavate-pedicellate cells 30-35 x 20-35 μ but not in a distinct palisade. . . 124. R. Sm-33-785
15. Not as above 16
 16. Clamp connections present 125. R. Sm-3057
 16. Clamp connections absent. 126. R. Sm-39193

Rhodophyllus Sm.-14733

Pileus 2.5 cm. broad, obtusely conic, margin incurved at first, surface dry and covered by fibrillose recurved squamules, umbo merely fibrillose, "Dusky slate violet" and disc "Slate violet 1" on margin, margin incurved and splitting for a short distance inward; flesh concolorous with surface, fragile, thin, odor spermatic, taste very slightly nauseous; lamellae tinged purplish gray on margin--otherwise whitish, sinuate, ventricose, close, 2 tiers of lamellulae; stipe 6 cm. long, 5 mm. wide at apex, slightly enlarged below, except for the whitish base concolorous with the pileus due to a coating of purplish fibrils, becoming fibrillose-squamulose, but not punctate, hollow, fragile.

Spores 8-10 x 5-6 μ , elliptic, obscurely angular, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-40 x 8-9 μ , narrowly clavate, content homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel, hyaline in KOH, subhymenium thin and inconspicuous; pileus trama homogeneous beneath a surface layer of broad (8-15 μ) hyphae with cells filled with violet sap, this color slowly dingy vinaceous in KOH; clamp connections present.

Habit, habitat and distribution: Single on humus, Lower Clewcha River Valley, Olympic Peninsula, Wash.; July 3, 1939, Sm.-14733.

Observations: The violet colors, Inocybe-like odor, obscurely angular, elliptic spores, scaly pileus, and fibrillose stipe are all outstanding characters.

Pileus 1.5-2.5 cm. broad, obtuse with an incurved margin, margin spreading in age, disc often slightly depressed in the truncated umbo, surface moist but also obscurely granular-furfuraceous--more conspicuously so in age, evenly dark fuscous-violaceous; flesh thin, grayish-blue, odor and taste none; lamellae bluish gray young, gradually paler and then pinkish, close, narrow to moderately broad, ascending adnate, edges uneven but not bordered; stipe 2-3 cm. long, 2-4 mm. thick, terete or compressed, hollow, fragile, perfectly naked and glabrous, dark gray-blue to violaceous, base paler.

Spores 9-11 x 5.5-7 μ , angular-elliptic to angular-ovate, pinkish in KOH, yellowish in Melzer's solution, apiculus prominent, oblique, depression usually broad; basidia four-spored, 30-40 x 8-10 μ , content \dagger globular and many globules floating free in mount; pleurocystidia none; cheilocystidia very rare to scattered, projecting as hairs 4-5 μ broad; gill trama parallel, content finely globular; pileus trama homogeneous beneath a dense turf of pileocystidia clavate in shape and with dark smoky brown contents, extremely variable in size, occasionally branched and some with secondary septa; clamp connections none seen.

Habit, habitat and distribution: Gregarious under conifers, Narada Falls, Mt. Rainier National Park, Wash., Sept. 3, 1948, Sm.-30915.

Observations: It differs from 39209 in cheilocystidia and dry, non-striate pileus.

Rhodophyllus Sm.-8837

Pileus 1-2 cm. broad, obtusely umbonate, becoming broadly campanulate, margin inrolled at first, surface dry and densely felty-fibrillose (not squamulose in material studied, but the type which becomes so) color evenly "dull violet black" to "dark slate violet 2"; flesh thin, "dark grayish blue violet", odor and taste not distinctive; lamellae "dull bluish violet", becoming rosy from spores, subdistant, moderately broad, narrowly adnate; stipe 4-5 cm. long, 4-5 mm. thick, equal, "dark grayish blue violet" or at base merely pallid violaceous, evenly covered to apex with a concolorous coating of fibrils the free ends of which give a rough character to stipe surface (but not blackish punctate anywhere), hollow, cortex bluish to violet.

Spores 6-10 x 5.5-7 μ , angular-elliptic, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-44 x 10-14 μ , content homogeneous in KOH; pleurocystidia none; cheilocystidia none; gill trama subparallel, nearly hyaline in KOH; pileus trama with a thick surface layer of hyphae 8-11 μ broad filled with fuscous-violet content which breaks down rapidly in KOH, remainder of trama floccose and hyaline; clamp connections present.

Habit, habitat and distribution: Single to scattered under spruce, Crescent City, Calif., Nov. 17, 1937, Sm.-8837.

Observations: The umbonate pileus, blue colors of all parts and fibrillose pileus and stipe are distinctive.

Rhodophyllus Sm.-32-461

Pileus 10-20 mm. broad, conic, becoming campanulate to nearly plane and with a conic umbo, surface innately fibrillose and in some becoming fibrillose-squamulose, color near "buffy brown" or grayer, striate when moist but only subhygrophanous; lamellae whitish then flesh colored, close, equal, deeply adnexed, edges even; stipe 4-6 cm. long, 1-3 mm. thick, equal, solid, slightly fibrillose, "manganese violet" evenly over all.

Spores 8-10 x 6-7 μ , angular ovate and obscurely nodulose, pinkish in KOH, yellowish in iodine; basidia four-spored, 30-36 x 8-9 (10) μ , content homogeneous or nearly so; pleurocystidia none; cheilocystidia none; gill trama parallel, hyaline in KOH, subhymenium not distinctive; pileus trama homogeneous, cystidioid; hyphal end-cells appressed over pileus, scattered toward margin of cap, colorless in KOH, tramal body homogeneous, brownish to hyaline in KOH; clamp connections rare.

Habit, habitat and distribution: Scattered on woody debris (around an old stump) Stockbridge, Mich., Sept. 21, 1932, Sm.- 32-461.

Observations: The olive brownish pileus and violet stipe are distinctive along with the slender stature.

Rhodophyllus Sm.-16590

Pileus 10-25 mm. broad, obtusely conic becoming plane, with a low broad umbo, surface glabrous, toward the margin the cuticle lacerated to form appressed fibrils, color "Saccardo's slate" (dark bluish) to "Dark Medici blue"; flesh thin, watery, odor and taste mild; lamellae close to subdistant, 2 tiers of lamellulae, ascending-adnate but soon receding, broad (1-5 mm.) and ventricose, pallid, becoming dingy pink, edges uneven to eroded; stipe 4-6 cm. long, 2-3 mm. thick at apex, slightly enlarged toward base, stuffed, surface glabrous and appressed, silky longitudinally striate, evenly "deep Dutch Blue" over all (brighter than pileus) inside and out, base \pm pallid.

Spores 6-7.5 μ , angular-globose, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 28-35 \times 9-10 μ , some with oily-globular content; pleurocystidia none seen; cheilocystidia none; gill trama parallel, hyaline in KOH; pileus trama homogeneous beneath a cuticular layer of hyphae with blue pigment in cells (soon hyaline in KOH), free hyphae ends projecting and becoming matted down. Clamp connections present.

Habit, habitat, and distribution: Gregarious on moss, Boulder Creek Trail, Mt. Baker, Wash., Sept. 3, 1941, coll. E. S. Mains (Sm.-16590).

Observations: Near nitidus, but slender and with smaller spores.

Rhodophyllus coelestinus var. *violaceus* (Karff.) comb. Nov.

Pileus 8-12 (15) mm. broad, conic when young, the margin bent in slightly toward the stipe, expanding to conic-campanulate, surface dry to moist and innately silky-fibrillose when viewed under a lens, margin even, color evenly dark blue "deep slate blue", scarcely fading; flesh thin, fragile, pallid, odor and taste mild; lamellae adnexed, close to subdistant, narrow to moderately broad, white, finally becoming pale pink, not reaching the margin of the pileus, edges even; stipe 3-6 cm. long, 1-1.5 mm. thick at apex, equal or slightly enlarged downward, pruinose at apex, otherwise glabrous and concolorous with pileus or darker, base with a cottony mycelium.

Spores 9-11 x 6-7.5 μ , angular-tuberculate, elliptic in outline, pinkish in mass; basidia four-spored; pleurocystidia and cheilocystidia none differentiated; gill trama homogeneous and parallel; pileus trama homogeneous, cuticle not clearly differentiated, clamp connections not seen.

Habit, habitat, and distribution: Usually single on rich humus in woods, rare. Known from Nova Scotia, Michigan, and Oregon.

Observations:

Rhodophyllus Sm.-19835

Pileus 1.5-2.5 cm. broad, convex to nearly plane, with an inrolled margin, becoming plane or with a broad obtuse umbo, surface dry, with minute fibrillose scales around the disc, merely appressed fibrillose toward the margin, disc dark violaceous, paler violet toward the margin, margin soon lacerated; flesh pallid violaceous, odor and taste none; lamellae adnate becoming adnexed, subdistant or nearly so, moderately broad, becoming ventricose, whitish or a very pale tinge of violaceous gray, soon pinkish from spores, edges even or nearly so; stipe 3-6 cm. long, 2-3 mm. thick, equal or nearly so, hollow, hoary but soon merely unpolished, bright violet (almost concolorous with pileus), apex with scurfy points, some twisted striate in age, base white mycelioid.

Spores 8-11 x 5-6.5 μ , elliptic in outline and obscurely angular, hyaline or nearly so in KOH, yellowish in Melzer's sol.; basidia four-spored, 35-40 x 9-10 μ , content homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel, the cells broad and elongated brownish to hyaline in KOH; pileus trama brownish to hyaline in KOH, homogeneous beneath a cuticular layer of hyphae 10-20 μ broad filled with violet content (vinaceous brown in KOH and color persistent), the cells short and ellipsoid in the upright hyphal tips; clamp connections none.

Habit, habitat and distribution: Single to scattered on moss, Rhododendron, Ore., Oct. 17, 1944, Sm.-19835

(more)

Observations: The obscurely angular spores are distinctive in this group.

Rhodophyllus coelestina Sm.-33-928

Pileus \pm 1 cm. broad, obtusely conic to convex, margin incurved around the gill extremities to give it a crenate appearance, surface dry, somewhat striate with depressed lines, furfuraceous to minutely squamulose, color "dusky blue violet" over all, scarcely changing; flesh thin, violaceous, odor and taste not recorded; lamellae white, broad, adnate, subdistant, finally pinkish from spores; stipe 5 cm. long, 2 mm. thick, naked and glabrous, colored like the pileus.

Spores 8-10 x 5-6.5 μ , angular-elliptic, hyaline to pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-36 x 10-11 μ , content homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel, hyaline, some cells with oily content; pileus trama hyaline in KOH, cuticular hyphae with fuscous-blue pigment at first (this breaks down rapidly in KOH), pilocystidia as clavate hyphal end-cells variously disposed over surface (often aggregated to form the squamules), content blue but rapidly hyaline in KOH; clamp connections none.

Habit, habitat and distribution: Single on sphagnum, east of Marquette, Mich. Sept. 10, 1933, Sm.-33-928.

Observations: This apparently differs from var. violaceous in having pilocystidia.

Rhodophyllus Sm.-lllll

Pileus 2 cm. broad, broadly convex with an inrolled margin, surface somewhat moist at first and evenly "drab" or grayer, slowly fading to dingy brownish gray, at first rather evenly covered by inaeate, very fine, gray fibrils but not aggregating to form scales, subglabrescent in age, opaque; flesh white, firm, pliant-cartilaginous, odor and taste mild; lamellae close (34 reach stipe, 3 tiers of lamellulae), moderately broad (3 mm.) sharply and deeply notched and lacking a decurrent tooth, white but soon flushed pink; stipe 3 cm. long, 2.5 mm. thick, equal, solid, very brittle, cartilaginous, pale yellowish incarnate within, surface similar in color or paler, at first covered over all by fine irregularly arranged grayish-appressed fibrils.

Spores 6-7 x 4-5.5 μ , broadly elliptic to subglobose and obscurely (though distinctly) angular, hyaline in KOH, yellowish in iodine, pinkish in deposit; basidia four-spored, 30-35 x 2-3 μ , content of some oily-globular; pleurocystidia and cheilocystidia none; gill trama parallel, the hyphae narrow; pileus trama homogeneous, cuticular region of radial, more compactly arranged hyphae than are those in the tramal body but hyphae not otherwise distinctively differentiated; clamp connections present.

Habit, habitat and distribution: Single on larch stumps, South Lyons, Mich., Oct. 5, 1938, Sm.-lllll.

Observations: The habitat on conifer wood, cartilaginous consistently, small, obscurely angular spores, gray fibrils on stipe and white gills at first are distinctive.

Rhodophyllus Sm.-29963

Pileus 1-2.5 cm. broad, obtuse expanding to plane or retaining and obtuse umbo, surface moist beneath a whitish silky-fibrillose filmy coating, ground color fuscous, hygrophanous, grayish when faded, some zonate near margin; odor none, taste mild or finally bitterish; lamellae adnexed, close, broad and becoming ventricose, pallid and at length vinaceous, edges eroded; stipe 4-5 cm. long, 1-3 mm. at apex, equal or slightly enlarged downward, fuscous but whitish-punctate from fibrils at first, finally \pm glabrescent.

Spores 6-7.5 (8) \times 5-6 μ , angular-elliptic, nearly hyaline in KOH; basidia four-spored, 28-32 \times 7-8 μ , content scarcely granular; pleurocystidia and cheilocystidia none; gill trama parallel, wood brown in KOH, subhymenium hyaline and subgelatinous; pileus trama homogeneous and colored like gill trama except for a paler cuticular region; clamp connections none.

Habit, habitat and distribution: Gregarious on soil Lower Takoma Creek, Mt. Rainier National Park, Wash., Aug. 7, 1948, Sm.-29963.

Observations: The very small nearly hyaline spores are distinctive.

Rhodophyllus - Sm - 39677

Pileus 10-20 mm. broad, broadly convex with an inrolled margin, surface dry and appressed fibrillose, dull white but gradually dingy to dingy vinaceous, in age plane or nearly so; flesh thin, pallid, odor and taste slightly farinaceous; lamellae close to crowded, narrow, broadly adnate becoming decurrent, whitish, becoming pink from the spores, edges even; stipe eccentric but cap marginate behind, short, 5-10 mm long, 2-3 mm thick, equal or nearly so and with a few white rhizomorphs at base, surface hoary-white from thin fibrillose covering but dingy ground color soon showing, glabrescent and watery brownish in age.

Spores 8-10 x 5-6 μ , angular-elliptic; basidia 34-40 x 9-10 μ , four-spored, content somewhat granular; pleuro- and cheilocystidia none seen; gill trama parallel or nearly so, hyaline in H₂O fresh, content scarcely granular; pileus trama homogeneous, hyaline in H₂O fresh.

Habit, habitat and distribution: Gregarious on decayed wood of hardwoods, Mackinaw City Hdqs., Mackinaw City, Michigan, Aug. 16, 1952. Sm-39677.

Observations: Near R. byssisedus but whiter and with less basal mycelium.

Rhodephyllus Sm.-10015

Pileus 2-3.5 cm. broad, convex to broadly conic at first, becoming nearly flat, if umbonate the umbo low, broad, and flattened, surface dry and innately fibrillose, becoming somewhat scaly at times, often glistening under a lens, margin inrolled, opaque and even, color evenly "pale drab gray" to "drab gray" darker at times; flesh grayish, thin, odor fragrant, taste slight but not distinctive; lamellae pale gray but soon grayish flesh color from the spores, crowded, thin, adnate, moderately broad to narrow, edges whitish; stipe 4-7 cm. broad, 1.5-2.5 mm. thick, pallid gray like the pileus and whitish pruinose toward apex, the base covered with white cottony mycelium, remainder naked and glabrous.

Spores 9-11 x 5.5-7 μ , angular-elliptic and the corners produced into nodules in many, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 34-40 x 8-9 μ , content homogeneous in KOH; pleurocystidia none; cheilocystidia none; gill trama parallel; pileus trama homogeneous, hyphae of cuticular region radial and of various widths, (no cytidoid elements seen); clamp connections absent.

Habit, habitat, and distribution: Scattered under second growth hardwood, near ^eCady's Cove, Great Smoky Mts. National Park, Tenn., Aug. 10, 1938. Sm.-10015.

Observations: The lack of cystidioid elements on the pileus of one in this group is peculiar and should be rechecked.

Rhodophyllus Sm-39447

Pileus 5-12 mm. broad, conic with a bent in margin, expanding to broadly conic-campanulate with a papillate umbo, surface moist beneath a delicate hoary-silky fibrillose coating, dark grayish brown (\pm wood brown) but fading to "tilleul buff" often somewhat concentrically banded; flesh pallid, odor faintly fragrant, taste mild; lamellae thickish, pallid, broad, ventricose, ascending-adnate, subdistant, finally pink from spores; stipe 4-5 cm. long, 1-2 mm. thick, equal, brittle, near "hair brown" (much darker than faded cap), glabrous, naked, base only faintly mycelioid.

Spores 7-8.5 x 6.5-7.5 μ , broadly angular-elliptic; basidia four-spored, 36-40 x 9-10 μ ; pleurocystidia and cheilocystidia none seen; gill trama somewhat interwoven; pileus trama homogeneous but surface with free hyphal ends projecting.

Habit, habitat and distribution: Gregarious on soil around old uprooted tree, Tahquamenon Falls State Park, Michigan, August 11, 1952. A.S. 39447.

Observations: I think I wrote this up once before but can't seem to locate description. Could it be 39236 without pleurocystidia?

Rhodophyllus Sm-39339.

Pileus 3 cm. broad, plano-umbonate, umbo small and obtuse, surface dry and evenly minutely squamulose, color evenly "dark purple drab"; flesh whitish, odor and taste none; lamellae white becoming salmon-cream and finally pink, broad, depressed-adnate, close to subdistant, broad and ventricose, 3 tiers of lamellulae; stipe 5 cm. x 3.8 mm., equal, slightly compressed, concolorous with pileus and minutely squamulose from projecting caulocystidia and aggregations of fibrils, extreme apex whitish.

Spores 8-11 x 7-8 μ , angular-elliptic; basidia four-spored, 42-50 x 10-13 μ , content not conspicuously granular; pleurocystidia none seen; cheilocystidia none seen; gill trama subparallel; pileus trama homogeneous beneath a turf of \dagger disarranged pilocystidia 30-70 x 10-18 μ and having purplish-vinaceous content in KOH, the cells clavate to subfusoid or merely undifferentiated hyphal tips.

Habit, habitat and distribution: Single on rich humus, West Branch, Maple River, Emmet Co, Michigan, August 3, 1952. Sm-39339.

Observations:

Rhodophyllus -Sm.-33-785

Pileus 9-10 mm. broad, convex or with a slight conic umbo, surface dry and somewhat granulose, breaking up into irregular radial fissures, "snuff brown" on disc and toward margin avellaneous, opaque at all stages; flesh thin, odor and taste not distinctive; lamellae subdistant, broad, adnate, white becoming pink, edges eroded; stipe 2-3 cm. long, 1.5 mm. thick, equal fragile, pallid yellowish white, faintly pruinose over all.

Spores 8-10 x 5-6 μ , angular-elliptic, pale pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 x 7-8 μ ; pleurocystidia and cheilocystidia none; gill trama subparallel, homogeneous, of elongated narrow hyphae; pileus trama homogeneous beneath a cuticle of clavate pedicillate cells 20-35 μ wide and 30-35 μ long, content smoky brownish in KOH, not arranged in a palisade but instead scattered or in groups; clamp connections very rare.

Habit, habitat, and distribution: On humus in wet mixed hardwood and hemlock forest, North of Newberry, Mich. Aug. 28, 1933, Sm.-33-785.

Observations: The cuticular cells, white gills and snuff brown pileus are distinctive. Compare Sm.-33-711.

Rhodophyllus Sm.-3057

Pileus 2-3.5 cm. broad, broadly conic to nearly expanded with a minute mammillate umbo, concentrically grooved, appressed silky under a lens, merely subhygrophanous, near "natal brown" moist, slowly fading to dingy dark ash-gray brown, margin wavy to somewhat crenate, inrolled in many until near maturity; flesh thin, firm, pliant, dark grayish brown, finally whitish, odor and taste faintly farinaceous; lamellae narrow, adnate by a tooth (nearly free), close, pallid to gray becoming flesh color, edges even; stipe 8-11 cm. long, 3-4.5 mm. thick, equal or nearly so, almost blister at first (dark brown) with scattered fibrillose flecks, fibrillose-pruinose at apex to somewhat scabrous, base slightly enlarged, often compressed, fragile, hollow.

Spores 7-9 x 5-6 μ , angular-elliptic, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 28-34 x 7-8 μ , content \pm homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel, subhymenium interwoven, thicker than in most species of genus but not gelatinous, pileus trama with narrow radial \pm hyaline surface hyphae gradually merging (increasing in diam.) with those of the tramal body, upper one-third of trama having brown-walled hyphae; clamp connections present.

Habit, habitat and distribution: Scattered along side of highway, Lake Crescent, Wash., Oct. 9, 1935, Sm.-3057.

Observations: In the R. mammosus group.

Rhodophyllus Sm-39193 conicus-mammosus group.

Pileus 1-3 cm. broad, conic-campanulate with an incurved margin, expanding to broadly campanulate or nearly plane with a papillate umbo, surface shining and not hygrophanous, or fading as if subhygrophanous, typically opaque and often concentrically zoned in marginal area, disc usually near "warm buff" (yellow) or "chamois", marginal area "ivory yellow" or paler; flesh thin but not fragile, pallid, odor fragrant, taste mild; lamellae white to whitish becoming delicate pink, close, broad, adnexed in large caps, ascending adnate in unexpanded caps, edges even; stipe 4-10 cm. long, 1-2.5 mm. thick, strict, fragile, glabrous and naked, watery brownish becoming pallid, sparse mycelium at base.

Spores pink in mass, $7-9 \times 5-6.5 \mu$, angular-elliptic; basidia $28-36 \times 8-9 \mu$, four-spored; pleurocystidia and cheilocystidia none; gill trama hyaline, parallel; pileus trama hyaline, homogeneous; clamp connections not seen.

Habit, habitat and distribution: Scattered on moist humus under hardwoods, Pellston, Michigan, 7-20-52, A.H.S. 39193.

Observations: This is a common and characteristic species easily known by the strict slender stipe and yellowish umbo. It gives one the impression of a dry cap but actually it fades as if subhygrophanous.

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Rhodophyllus Sm.-33-881

Pileus 2-4 mm. broad, convex and either with or without a small rather pointed papilla, pruinose, when moist striate to disc with broad distant striations, color "olive Brown" to "buffy brown" or along the margin "dark olive buff", margin even; flesh thin and delicate, odor and taste strongly farinaceous; lamellae distant, narrow, broadly adnate becoming adnate-decurrent, grayish before colored by spores, thickish, edges even; stipe 1 cm. long, \pm 1 mm. thick, equal, pale gray, fragile, pruinose above.

Spores 7-9 (10) \times 6.5-8 (9) μ , angular-globose, pink in KOH; basidia 50-55 \times 9-11 μ , four-spored; pleurocystidia and cheilocystidia none; gill and pileus trama not studied.

Habit, habitat, and distribution: On moss along a stream, Marquette, Mich., Sept. 6, 1933, Sm.-33-881.

Observations: Try R. rhodocalix. There was not enough material to section.

Rhodophyllus Sm-39675

Pileus 15 mm. high, 10 mm. broad, sharply conic, margin curved in at first, surface glabrous, moist, hygrophanous, faintly translucent-striate, dark fuliginous fading to near drab gray; flesh thin, gray-watery, odor none, taste slightly disagreeable; lamellae close, ascending-adnate, broad near cap margin, pale gray becoming dingy vinaceous, edges even; stipe 4 cm. long, 1-3 mm. thick, equal, watery-fragile, slightly paler than pileus and at first coated with a fine pubescence from caulocystidia, glabrous in age.

Spores 6-10 x 7-8 μ , angular-ovate to angular-elliptic, basidia four-spored, 32-38 x 9-11 μ , content granular; pleurocystidia none seen; cheilocystidia none seen; caulocystidia 40-120+ x 3-5 μ , filamentous with subcapitate apices; gill trama subparallel, the hyphae brownish in H₂O fresh; pileus trama homogeneous but upper half of hyphae with dark brown walls.

Habit, habitat and distribution: Solitary under second growth hardwoods, Mackinaw City Hardwoods, August 16, 1952, Sm-39675.

Observations: This should be a very distinctive species distinguished from cuspidatus and salmonaeus by the dark color and non-quadrate spores.

Rhodophyllus Sm.-33-518

Pileus 1-2.5 cm. broad, conic when young, expanding to nearly plane with a small abrupt papilla for an umbo, glabrous, hygrophanous, "Verona brown" when moist, "Carbridge buff" when faded, margin striatulate; flesh thin, odor and taste somewhat farinaceous; lamellae gray becoming flesh color, close, sinuate or attached only by a tooth, narrow to moderately broad, becoming ventricose near stipe in age, edges even to somewhat eroded; stipe 4-8 cm. long, 2-4 mm. thick, striate, very cartilaginous, concolorous with pileus, with occasional white fibrils near apex, and more numerous downward, becoming longitudinally striate.

Spores 7-9 x 5-6 μ , angular-elliptic to angular-sub-globose, pinkish in KOH, yellowish in iodine; basidia four-spored, 26-30 x 8-9 μ , content homogeneous; pleurocystidia none seen; cheilocystidia none; gill trama parallel, pileus trama homogeneous beneath an indefinite region of narrower hyphae than those in tramal body, non-gelatinous and not clearly differentiated into a pellicle, pale brown to dingy in KOH; clamp connections none.

Habit, habitat, and distribution: On moist soil by a stream Big Garlic River, Mich. (near Marquette), June 15, 1933, Sm.-33-518.

Observations: The Verona brown papillate umbonate pileus and small spores are distinctive.

Rhodophyllus - Sm 39452.

Pileus 15-30 mm. broad, convex with a straight margin, expanding to broadly convex or nearly plane but not becoming depressed, surface glabrous, moist and hygrophanous, conspicuously translucent striate to disc, near olive brown to buffy brown but soon with a redder tone from spores, fading on disc first to near wood brown; flesh thin, concolorous with surface, fragile, odor and taste rancid farinaceous; lamellae broad, close to near subdistant, adnexed, near buffy brown young but soon vinaceous from spores, edges even; stipe 5-7 cm. long, 2-3 mm. thick, equal fragile, base with sparse white mycelium, glabrous and naked above the basal portion, concolorous with moist pileus.

Spores angular-globose, 7-8.5 μ ; basidia four-spored, 30-36 x 9-10 μ , content granular; pleurocystidia and cheilocystidia none seen; gill trama parallel or nearly so, hyphal walls brownish; pileus trama homogeneous but hyphae of cuticular region somewhat narrower.

Habit, habitat and distribution: Solitary in deep woods of beech, maple and hemlock, Tahquamenon Falls State Park, Michigan, August 11, 1952- Sm-39452.

Observations: The appearance and odor and taste are somewhat like those in *Lyophyllum*.

Rhodophyllus Sm.-1778

Pileus 1-3 cm. broad, convex with a minute conic umbo, becoming campanulate, or nearly plane and with or without an umbo, glabrous, moist, hygrophanous, near "bister" or "Prout's brown", fading to silvery gray and then appearing silky under a lens, striate when moist; flesh very thin and brittle, odor none, taste slightly farinaceous; lamellae subdistant, bluntly adnate, soon seceding, moderately broad and nearly equal, becoming ventricose and broad at times; pale gray becoming dingy flesh color; stipe 4-6 cm. long, 2 mm. thick, strict, pallid brownish, gray, longitudinally fibrous striate to apex, fibrillose covering causing a gray, hoary appearance, brown like the pileus within, hollow, very fragile, equal, base white cottony.

Spores 7-8 μ , angular-globose, pink in KOH, yellow in Melzer's sol.; basidia four-spored, 28-35 \times 8-11 μ , content homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel or nearly so; pileus trama homogeneous, surface hyphae radially arranged; clamp connections absent.

Habit, habitat and distribution: Scattered in a grassy oak woods, Ann Arbor, Mich., Aug. 10, 1935, Sm.-1778.

Observation: The inrolled margin of the pileus longitudinally fibrous striate stipe, and globose spores are distinctive. It has the aspect of a small member of the *R. strictus* group.

Rhodophyllus Sm.-251

(staurospora?)

Pileus 2-4 cm. broad, convex to obtusely umbonate, not expanding, glabrous, moist, hygrophanous, "bister" on disc, "Verona brown" near margin, hygrophanous, pale gray when faded, striate nearly to apex, opaque faded; odor not distinctive, taste somewhat farinaceous; lamellae close, broad, narrowly adnate, rather dark gray, becoming flesh color, edges eroded; stipe 4-8 cm. long, 3-4 mm. thick, hollow, fragile, equal, pale gray or darker, evenly longitudinally fibrous.

Spores 7-9 x 7-9 μ , mostly rectangular-nodulose in side view (corners produced into nodules), nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 35-40 x 10-12 μ , content somewhat granular; pleurocystidia and cheilocystidia none; gill trama parallel; pileus trama homogeneous except for colored (in KOH) hypodermal region, hyphae on surface radial, appressed and 5-12 μ in diam.; clamp connections none.

Habit, habitat and distribution: Gregarious in mixed woods, Adirondack Mts., New York, Aug. 27, 1934, Sm.-251.

Observations: The small rectangular spores are distinctive.

Rhodophyllus Sm.-40726

Pileus 2-4 cm. broad, convex with an incurved margin, expanding to broadly convex surface moist and hygrophanous, at first often cinereous-hoary from minute innate fibrils, "mummy brown" and opaque, remaining so until fading and then changing to hair brown or wood brown; flesh firm, concolorous with surface, odor and taste of raw cucumbers; lamellae distant, broad, becoming ventricose, broadly adnate or with a decurrent tooth, dark gray to cinnamon drab, becoming wood brown or more vinaceous from spores, edges even; stipe 2-3 cm. broad, 3-4 mm. at apex, equal or narrowed below, hollow, fragile, silvery gray and long-striate from appressed fibrils, occasionally darkened at base.

Spores 8-11 x 6.5-8 μ , broadly angular-elliptic to angular-subglobose, pale pink in KOH, dingy yellowish in Melzer's sol.; basidia four-spored, 34-40 x 9-10 μ , content globular; pleurocystidia and cheilocystidia none seen; gill trama subparallel pale fuscous revived in KOH, subhymenium hyaline, of narrow, much-branched hyphae; pileus trama homogeneous, fuscous in KOH, cuticle of radial appressed hyphae but not otherwise differentiated, pigment incrustated on wall; clamp connections present but rare.

Habit, habitat and distribution: Gregarious on moss, Carbon River outwash, Mt. Rainier National Park, Wash., Oct. 9, 1952, Sm.-40726.

Observations: The fuscous pileus trama (as revived in KOH), dark color fresh, hoary, convex pileus, broad distant gills, silvery stipe and odor and taste of raw cucumbers are distinctive.

Rhodophyllus Sm.-13861

Pileus 2-4.5 cm. broad, broadly convex with an inrolled margin when young, often with a slight conic umbo, in age either umbonate or plane, the margin frequently uplifted in age and wavy, glabrous, hygrophanous, when moist "mummy brown" over all and opaque, sometimes becoming nearly "Fraut's brown" and then striatulate on the margin before fading to dull silvery gray; flesh thin, concolorous with surface, very fragile, odor of crushed flesh farinaceous, taste very strongly farinaceous; lamellae moderately close (25-30 reach stipe), moderately broad (3-4 mm.), bluntly adnate, soon seceding, color "drab" when young, near "cinnamon drab" or more flesh colored at maturity; stipe 3-8 cm. long, 2-4 mm. thick, glabrous, longitudinally striate (often twisted) base with a thin coating of white-cottony mycelium, equal, cartilaginous, fragile, becoming hollow.

Spores 8-10 x 6-7.5 (6) μ , broadly angular-elliptic, moderately to \pm obscurely angular, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 28-35 x 9-10 μ , content homogeneous; pleurocystidia none; cheilocystidia none; gill trama parallel, dingy ochraceous tawny in KOH, sub-hymenium not distinctive; pileus trama homogeneous, dark rusty brown in KOH; clamp connections present.

Habit, habitat and distribution: Gregarious to scattered on soil and moss, under conifers, common, Lake Crescent, Wash., May 29, 1939, Sm.-13861.

Observations: The dark brown pileus and drab gills are distinctive.

Rhodophyllus Sm.-20094

Pileus 1-2.5 cm. broad, convex with an incurved margin, becoming broadly convex, surface glabrous, moist, hygrophanous, opaque, very dark brown ("mummy brown") over all, slightly paler and more ashy when faded; flesh thin, cartilaginous, dark watery brown fading to pallid, odor and taste slightly farinaceous; lamellae broad (5-6mm.), horizontal, bluntly adnate to adnexed, 2 tiers of lamellulae, subdistant to close, pallid gray when young, finally dingy pinkish from the spores, edges even or nearly so; stipe 4-5 cm. long, 3-4.5 mm. thick, equal, stuffed with a white pith but soon hollow, surface glabrous, only a little paler than the pileus, base whitish.

Spores 8-10 x 5.5-7 μ , angular-elliptic, pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-42 x 8-10 μ , some with oily content; pleurocystidia none; cheilocystidia none; gill trama parallel, the hyphae narrow, hyaline in KOH; pileus homogeneous beneath a cuticle of narrow hyphae radially arranged and with smoky brown content in KOH; clamp connections present.

Habit, habitat and distribution: Gregarious on naked soil on a road bank, Rhododendron, Ore., Oct. 22, 1944, Sm.-20094.

Observations: The aspect is that of Lyophyllum atratum but the pink angular spores indicate Rhodophyllus.

Rhodophyllus Sm.-29365

Pileus 1.5-3 cm. broad, obtuse with an incurved margin, expanding to plane or with a low abrupt umbo, surface glabrous, moist and hygrophanous, "fuscous" over all and slowly becoming "olive brown", margin faintly striate moist, hygrophanous and fading to "buffy brown" or near it; flesh concolorous with surface, odor and taste farinaceous; lamellae ashy gray finally tinged pinkish, moderately close, depressed-adnate, moderately broad and becoming ventricose; stipe short, 1.5-3 cm. long, 3-5 mm. thick at apex, narrowed downward, watery pallid throughout or more grayish when young, silky fibrillose, becoming silky-striate.

Spores 8-10.5 x 6-7.5 μ , broadly angular-elliptic, pale pink in KOH, yellowish in Melzer's sol.; depression broad and often pronounced; basidia four-spored, 30-40 x 10-12 μ , with globular content; pleurocystidia none; cheilocystidia none; gill trama parallel and hyaline; pileus trama homogeneous beneath a non-gelatinous pellicle of mixed narrow and broad radial hyphae with smoky brown content (in KOH); clamp connections present.

Habit, habitat and distribution: Gregarious in an alder flat, Lower Takoma Creek, Mt. Rainier National Park, Wash., July 24, 1948, Sm.-29365.

Observations: This fungus is distinguished by the small size of the fruiting bodies, fuscous pileus, gray gills, farinaceous odor and taste and gray-silky stipe.

Rhodophyllus Sm.-37100

Pileus 2-4 cm. broad, obtuse, expanding to slightly umbonate or nearly convex, glabrous, moist, hygrophanous, when moist dark fuliginous fading to dingy ashy gray; flesh gray, odor and taste slightly farinaceous; lamellae close, broad, adnate, readily seceding, gray when young, gradually becoming vinaceous from spores; stipe 4-6 cm. long, 3-5 mm. at apex, equal or evenly enlarged downward, tubular, silvery, glabrous, naked or apex only very faintly pruinose, somewhat longitudinally striate lower down.

Spores 8-10 x 6-7.5 μ , angular-ovate to angular-sub-globose, some angular elliptic, pale pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 x 8-9 μ , content globular; pleurocystidia and cheilocystidia none seen; gill trama parallel, much globular material in cells, sub-hymenium well developed and sub-gelatinous; pileus trama with a very poorly formed pellicle of narrow (3-4 μ) hyphae, beneath it a hyaline hypoderm of \pm enlarged hyphal cells and beneath this the dull brown (in KOH) tramal body; clamp connections present on hyphae of pellicle.

Habit, habitat and distribution: Scattered in mixed woods, Wilderness Park, Mich., July 25, 1951, Sm.-37100.

Observations: This is a slender convex to obtuse "Entoloma" with slight farinaceous taste.

Rhodophyllus fuscifolius (FY.) Sm.-793

Pileus 8-15 mm. broad, obtusely conic to convex, glabrous, striate, "Vandyke brown" to "warm sepia", appearing fibrillose streaked under a lens, margin curved back against the gills; lamellae broad close, practically free, concolorous with pileus; stipe 3-4 cm. long \pm 1 mm. thick, concolorous with pileus or darker, equal appearing slightly appressed-fibrillose under a lens.

Spores 8-10 \times 6-7.5 μ , angular-elliptic to angular-ovate, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored; cystidia none (material not dried well and revived poorly).

Habit, habitat, and distribution: Scattered on rotten hardwood, logs, etc., Sept. 12, 1934, Warrensburg, N.Y., Sm.-793.

Observations: Possibly only a form of *R. clandestinus*.

Rhodophyllus Sm.-33-740

Pileus 6-10 mm. broad, conic, remaining unexpanded, moist, subhygrophanous, faintly striate on the margin, "chestnut brown" moist, fading to "vinaceous fawn" or "fawn color"; odor none; lamellae close to subdistant, vinaceous fawn, broad, edges even; stipe 13-25 mm. long, \pm 1.5 mm. thick, solid, equal, base white mycelioid, glabrous and naked above, concolorous with pileus.

Spores 8-10 \times 5.5-7 μ , angular-ovate to angular-elliptic, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-35 \times 8-10 μ , content mostly homogeneous; pleurocystidia and cheilocystidia none seen; gill trama of parallel brown-walled hyphae, subhymenium hyaline; pileus trama homogeneous, surface with radial appressed hyphae, all with brown walls; clamp connections present.

Habit, habitat and distribution: Scattered on moist soil under birch, Trout Lake, Mich., Aug. 24, 1933, Sm.-33-740.

Observations: This species is in the *R. clandestinus* group.

Rhodophyllus Sm.-33-746

Pileus 10-15 mm. broad, slightly umbonate with an elevated margin, margin even and striate, translucent-striate, margin even, color near wood brown and avellaneous, or a more pallid watery brownish, disc pale fuscous from minute blackish points, remainder of surface glabrous; flesh thin and watery odor and taste not recorded; lamellae subdistant, rather thick, remote from stipe (possibly attached by a line), pale gray at first, later flesh-tinged, edges even; stipe 3-4 cm. long, 1-2 mm. thick, weak and easily broken, pallid gray with an olive tone, glabrous, longitudinally fibrous-striate, slightly enlarged at apex and at base.

Spores 7-9 x 6-8 μ rectangular-tuberculate in side view, pinkish in KOH, yellowish in Melzer's sol.; basidia 38-40 x 10-13 μ , abruptly clavate above a narrow pedicel many with oily-globular content; pleurocystidia and cheilocystidia none; gill trama parallel, hyaline, pileus trama homogeneous but surface layer at least over disc with fascicles of cystidioid end-cells or hyphal tips (the cells with brownish content), grouped to form squamules; clamp connections present.

Habit, habitat and distribution: On moss, on a spring soaked bank, Silver Creek, near Emerson, Mich., Aug. 25, 1933, Sm.-33-746.

Observations: The gills have a soft consistency as in Pluteus but the tramal hyphae are not arranged in the same manner. The pileus tissue is rather firm in contrast to the gills. Try Nolanea stauraspora and substauraspora.

Rhodophyllus AHS-39192

Pileus 10-15 mm. broad, conic with an incurved margin, expanding to broadly conic, surface glabrous, moist, hygrophanous, dark fuliginous fading to dingy cinereous, faintly translucent striate moist; flesh thin to membranous, concolorous with surface, not markedly fragile, odor none, taste slight and not distinctive; lamellae close, narrow to moderately broad, ascending and attached at apex of stipe, gray (almost as dark as pileus), finally vinaceous, edges uneven; stipe 5-10 cm. long, 1-2 mm. thick, equal, fragile, almost concolorous with gills, apex sparsely white-fibrillose pruinose.

Spores 9-11 x 6-8 μ , angular-ovate to angular-elliptic; basidia four-spored, 36-42 x 10-12 μ ; pleuro- and cheilocystidia none seen; gill trama parallel, hyaline, no granular content; pileus trama homogeneous, cuticular layer of radial hyphae with brownish walls; clamp connections not seen.

Habit, habitat and distribution: Scattered on very decayed logs and rich humus, hardwoods, Pellston, Michigan, 7-20-52. A.H.S. 39192.

Observations: This reminds me of a Mycena in stature and coloration.

Rhodophyllus Sm.-41046

Pileus 10-15 mm. broad, conic, becoming obtusely campanulate, dark fuscous to hair brown, hygrophanous, striate on margin moist, fading to dark gray-brown (when dried about the color of Mycena atrocyanea); flesh gray, odor and taste not distinctive; lamellae ascending adnate, narrow, close, gray, finally pinkish; stipe 3-4 cm. long, 1 mm. thick, filiform, darker than pileus, naked and polished.

Spores 8-10 (10.5) \times 6-7 (7.5) μ , broadly angular-elliptic to angular-ovate, pinkish in KOH; basidia four-spored, 30 \times 10 μ , hyaline in KOH, content slightly oily-granular; pleurocystidia none; cheilocystidia none; gill trama hair brown to wood brown in KOH (with vinaceus shade evident), parallel; pileus trama homogeneous, cuticle of radial appressed hyphae of various diameters, darker in color than gill trama (all color in walls); clamp connections present.

Habit, habitat and distribution: Scattered on soil, Green Lake, Mt. Rainier National Park, Wash., Oct. 17, 1952, Sm.-41046.

Observations: The aspect is that of Mycena atrocyanea.

Rhodophyllus Sm.-37594

Pileus 1-2.5 cm. broad, convex with a curved in margin, expanding to plane, glabrous, hygrophanous, fuliginous moist, the disc usually darker than the margin, fading to dingy ash-gray in streaks and then appearing silky under a lens; flesh concolorous with surface, odor and taste not distinctive; lamellae dark fuliginous (± concolorous with pileus) finally tinged flesh color, subdistant to distant, horizontal and becoming ventricose, adnexed to depressed-adnate; stipe 2-4 cm. long, 1.5-3 mm. thick, equal or nearly so, concolorous with the pileus, at first with faint hoary longitudinal fibrils but these soon vanishing.

Spores 8-10 μ , angular-globose to angular-subglobose, pale pink in KOH, yellowish in Melser's sol.; basidia four-spored, 30-36 \times 8-9 μ , content homogeneous in KOH; pleurocystidia and cheilocystidia none; gill trama parallel, dull brownish in KOH, subhymenium thin; pileus trama homogeneous, no differentiation in pellicular region, hyphae dull bister in KOH throughout, no clamp connections seen.

Habit, habitat and distribution: Scattered on freshly turned soil under maple, Pellston H'dwoods, Aug. 10, 1951, Sm.-37594.

Observations: This fungus has the appearance of a small Lyophyllum but of course is distinguished by the spores.

Rhodophyllus Sm.-37589

Pileus 2-3 cm. broad, plano-umbonate, surface "pale drab gray" on margin and darker on disc (apparently faded), dry and silky under a lens, apparently hygrophanous; flesh white, odor and taste not distinctive; lamellae horizontal, close, ventricose, broadly adnexed, gray (concolorous with pileus), edges even; stipe short, 2-3 cm. long 3.5-4 mm. thick, equal, naked, concolorous with pileus or slightly more pallid.

Spores 7-9 x 6-8 μ , angular-subglobose, pale pink in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-44 x 10-12 μ , content with many refractive globules (oil?); pleurocystidia and cheilocystidia none seen; gill trama parallel, hyaline in KOH; pileus trama with a thick pellicular zone of hyphae 5-12 μ diam., hyaline and not gelatinous, a dingy hypodermal zone beneath this and remainder of trama hyaline; clamp connections present (but rare).

Habit, habitat and distribution: Two together on humus under second growth hardwood, August 10, 1951, Sm.-37589.

Observations: This appears to be a slender species of the lividus complex.

Rhodophyllus Sm.-39829

Pileus 18 mm. broad, obtusely umbonate, surface glabrous, moist, and hygrophanous, "fuscous" on disc, dull brown and translucent striate on the margin, gray on margin when faded, disc darker; odor and taste none; lamellae close broad, adnate gray, becoming vinaceous buff, edges eroded; stipe 6-12 cm. long, 3 mm. at apex, slightly enlarged downward, paler than pileus, base pallid, glabrous and translucent.

Spores 6-8 x 5-7 μ , angular-globose to subglobose, obscurely angular, nearly hyaline in KOH; basidia four-spored, 30 x 8-9 μ , content oily-granular; pleurocystidia none; cheilocystidia none; gill trama parallel, hyaline, the hyphae with oily content; pileus trama homogeneous beneath a thin subgelatinous pellicle of hyphae 4-6 μ in diam., scarcely colored (as revived in KOH); clamp connections present.

Habit, habitat and distribution: Single beside a log, Reflection Lake, Mt. Rainier National Park, Wash., Sept. 12, 1952, Sm.-39829.

Observations: This is a distinctive species by reason of the small, globose, obscurely angular spores, lack of cheilocystidia, and fuscous pileus. I have seen it in Oregon also.

Rhodophyllus Sm-39240.

Pileus 10-25 mm. broad, conic with a straight margin when young, expanding to broadly conic, surface glabrous, moist and hygrophanous, watery wood brown moist and then with prominent translucent striations, fading to avellaneous or more grayish but in age with a pinkish tone from maturing spores; flesh thin and fragile, odor fragrant and sharp, taste mild; lamellae broad and ventricose, ascending adnate to nearly free, close, grayish young but soon pink from spores, edges even; stipe 5-8 cm. long, 1-2 mm. at apex, equal, very fragile, typically glabrous and naked but in a few with faint silvery longitudinal striations, pale dingy honey color throughout.

Spores 7-9 x 6-8 u, angular elliptic to angular-subglobose; basidia 26-34 x 10-13 u, four-spored; pleurocystidia and cheil9-cystidia none seen; gill trama parallel or nearly so; pileus trama homogeneous, the hyphae of the upper region with brownish walls.

Habit, habitat and distribution: Scattered under second growth maple and beech, Pellston Hardwoods, July 23, 195 2, A.H.Smith 39240.

Observations: No cystidia were observed. The aspect is that of a wood brown Mycena.

Rhodophyllus clandestinus? (Sm.-33-698)

Pileus 10-13 mm. broad, conic, becoming conic-campanulate, margin incurved at first, glabrous, moist and hygrophanous, "Mars brown", "Fraut's brown" to "Natal brown", fresh, evenly colored, fading to a dark brownish gray; odor and taste none; lamellae very broad, narrowly adnate, close, concolorous with pileus but becoming vinaceous, edges even; stipe 4-6 cm. long, 1-1.5 mm. thick, very cartilaginous and rigid, glabrous, concolorous with pileus, white mycelioid at base.

Spores 8-11 x 6-7 μ , broadly angular-elliptic, pink in KOH, in Melzer's sol. yellowish; basidia (46) 50-60 x 10-12 μ , four-spored, content homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel in central strand which is of brown-walled cells, subhymenium hyaline; pileus trama homogeneous, all hyphae with dark brown walls; clamp connections present.

Habit, habitat and distribution: Scattered on humus under cedar, Cross Village, Mich., Oct. 19, 1933, Sm.-33-698.

Observations: The entire fruiting body is a dull rusty brown and the stature is that of a Mycena.

Rhodophyllus Sm.-30301

Pileus 1.5-4 cm. broad, conic-campanulate with an incurved margin young, broadly campanulate or finally the margin spreading to recurved and the disc with a papillate umbo, surface glabrous when moist and then a little grayer than cinnamon buff, hygrophanous and fading to "pale pinkish buff" or the disc with more yellow, surface when faded distinctly silky to minutely squamulose, often concentrically zoned and margin undulating; flesh thin, fibrous, pallid, odor faintly fragrant, taste mild; lamellae nearly white when young, soon pink from spores close, moderately broad, deeply and sharply adnexed (nearly free), edges even; stipe 5-10 cm. long, 1-2.5 mm. thick, equal, strict, fragile, grayish to avellaneous and with scattered whitish minute squamules toward the pallid apex, naked over lower portion.

Spores 7-9 x 5.5-7 μ , angular-elliptic, pale pink in KOH, yellow in Melzer's sol.; basidia four-spored, 50-55 x 2-9 μ , content homogeneous in KOH; pleurocystidia none; cheilocystidia none; gill trama hyaline and parallel, subhymenium not distinctive (very narrow and inconspicuous); pileus trama homogeneous, surface hyphae radial and 5-10 μ broad, not gelatinous; clamp connections present.

Habit, habitat and distribution: Gregarious under cedar, Lower Misqually River, Mt. Rainier, National Park, Wash., Aug. 18, 1948, Sm.-30301.

Observations: This is a small spored member of the R. ramosus stirps.

Rhodophyllus

Sm.-30621

Pileus 1-3.5 cm. broad, obtusely umbonate with a spreading margin when young, at maturity umbonate and with an uplifted wavy translucent-striate margin, glabrous, moist, hygrophanous, color a dingy yellowish brown (paler and grayer than "Saccardo's umber"), at times old caps with a tinge of cinnamon, fading on the disc first and becoming olivaceous-cinereous; flesh thin but firm, odor and taste mild; lamellae pallid grayish but soon flushed pink, close, depressed-adsate, ventricose, thickish, edges soon eroded; stipe 3-4 cm. long, 2-3 mm. thick, equal or slightly enlarged downward, stuffed then hollow, readily splitting, slightly paler than pileus over all, surface longitudinally silky-striate, base slightly mycelioid.

Spores 9-10.5 (11) \times 5.5-7 μ , angular-elliptic with a prominent oblique apiculus, the wall pale pink in KOH, yellowish in Melzer's sol.; depression broad and conspicuous; basidia four-spored, 36-42 \times 9-10 μ , content homogeneous; pleurocystidia none; cheilocystidia rare to absent, 30-50 \times 3-4 μ , filamentous and flexuous; gill trama parallel, hyaline sub-hymenium thin and inconspicuous; pileus trama with a pellicular layer of hyphae with cells 15-40 μ diam. (appearing parenchymatose in tangential section to pileus), hyaline in KOH, beneath this a region of brownish hyphae \pm interwoven, paler again toward subhymenium; no clamp connections present.

(more)

Habit, habitat, and distribution: Under conifers on very decayed wood as well as on wood in early stages of decay, Eagle Peak Trail, elev. 4500 ft., Mt. Rainier National Park, Wash., Aug. 26, 1948. Sm.-30621.

Observations: The aspect is of a pale small specimen of H. strictus.

Rhodophyllus Sm.-12095

Pileus 2-5 cm. broad, obtuse with an incurved margin, becoming nearly plane, glabrous and smooth, when moist, "olive brown" to "buffy brown", paler (near "deep olive buff") on the faintly striate margin, hygrophanous and dull gray when faded, margin regular or at times recurved; flesh thin and fragile (≤ 1 mm.), "deep olive buff", odor and taste not distinctive; lamellae moderately close, 20-25 reach stipe, 3 tiers of lamellulae, broad, (≤ 1 mm.) rounded adnate and very readily seceding, "pale olive buff" before colored by spores, edges eroded or uneven; stipe 3-4 cm. long, 2-3 mm. thick, equal, hollow, fragile, color dingy "deep olive buff" but grayish canescent from a thin silky fibrillose covering, apex faintly pruinose, base grayish fibrillose.

Spores 7-9 \times 5-6.5 μ , broadly angular-elliptic, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 36-40 \times 9-10 μ , content homogeneous; pleurocystidia and cheilocystidia none; gill trama parallel, pale brown in KOH, subhymenium thin and hyaline; pileus trama with a cuticular layer of appressed, radial hyphae with enlarged hyaline cells, (2-4 deep), tramal body brownish in KOH; clamp connections not present.

Habit, habitat and distribution: On humus under hemlock Kalalack, Wash., April 29, 1939, Sm.-12095.

Observations: The margin of the cap may become ^{more} Isabella color, but the characteristic color is near deep olive buff. The gray, fibrillose-canescant to scurfy stipe is a good field character.

Rhodophyllus

Sm.-34325

Pileus 2-3.5 cm. broad, conic to obtusely conic and expanding to conic campanulate, surface glabrous, moist, hygrophanous, color dark "bister" to "mummy brown" on disc, paler toward margin which may or may not be translucent striate, fading in streaks to cinereous or more brownish (dingy when faded); flesh watery, thin, odor and taste mild; lamellae dingy brownish to grayish young, becoming $\frac{1}{2}$ wood brown and finally dusted flesh color from spores, broad, close, ventricose, edges becoming uneven; stipe 3-5 cm. long, 2-4 mm. thick, equal, often compressed, glabrous and naked, dingy tawny olive to grayer and nearer mummy brown at base, slightly long-striate, readily splitting.

Spores 8.5-10.5 x 6.5-8 μ , broadly angular-elliptic, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored 36-42 x 8-10 μ ; homogeneous in KOH; pleurocystidia and cheilocystidia none; gill trama parallel, brown to dingy ochraceous brown in KOH, subhymenium paler than trama proper but not gelatinous; pileus trama homogeneous beneath a pellicle of narrow non-gelatinous hyphae, tramal body dark dingy brown in KOH, pigment at least in part incrustated on walls; clamp connections not seen.

Habit, habitat, and distribution: Gregarious under conifers, Lower French Creek, Medicine Bow Mts., Wyo., June 22, 1950, Coll. W. G. Solheim (Sm.-34325)

Observations: The dark colors of all parts, stature, campanulate pileus and broad spores are distinctive.

Rhodophyllus Sm-39234.

Pileus 1-2.5 cm. broad, conic with an incurved margin, expanding to broadly conic or campanulate, surface glabrous, moist, hygrophanous, "wood brown" and faintly translucent-striate, fading to near tulleul buff on disc first, with a polished appearance moist and not infrequently papillate; flesh thin but firm, concolorous with pileus, odor sharp and almost nitrous, taste mild; lamellae close, broad, ascending adnate, concolorous with the pileus, edges even; stipe 6-9 cm. long, 1.5-2.5 mm. thick, naked and polished, concolorous with pileus.

Spores 7-8.5 x 5-6 μ , angular-elliptic; basidia four-spored, 28-34 x 8-9 (10) μ , content somewhat granular; pleuro- and cheilocystidia none seen; gill trama parallel; pileus trama homogeneous, the cuticular region merely more compact than the remainder.

Habit, habitat and distribution: Scattered under second growth hardwoods, Pellston Hills, Michigan. 7-23-52, A.H.S. 39234.

Observations: I have had this from the George Reserve. It is a well-marked species of the Nolanea type distinguished by the sharp odor, glabrous pileus, and wood brown color over all.

Pileus 2-3 cm. broad, broadly conic with a small shallow depression on the disc, broadly umbonate at maturity, margin spreading, surface moist and hygrophanous, translucent striate, near "wood brown" to avellaneous moist, fading to pallid and then somewhat glistening; flesh very thin and fragile, odor and taste not recorded; lamellae close, moderately broad, ascending but free from stipe, pale gray becoming pink; stipe 5-7 cm. long, 3-3.5 mm. thick, equal or slightly enlarged below, hollow and very fragile, grayish-avellaneous or more yellow present, pruinose above and longitudinally twisted striate downward.

Spores 8-11 x 6-9 μ , angular-elliptic to angular-subglobose, also nodulose (as in Inocybe species), in side view \dagger rectangular-nodulose, in end view \dagger quadrate, pale pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-34 x 9-12 μ , broadest below apex, content of some oily-granular; pleurocystidia and cheilocystidia none; gill trama parallel, dull brown in KOH, subhymenium not distinctive; pileus trama homogeneous, surface hyphae radial but of various sizes and not gelatinous, hypodermal region dull brownish in KOH; no clamp connections seen on carpophore but they are present on mycelium around base of stipe.

Habit, habitat and distribution: Gregarious on rotten conifer logs, Longwire, Wash. , July 14, 1948, Sm.-29008.

Observations: The angular-nodulose spores are distinctive, as appears to be the habitat and lack of any cystidia.

Rhodophyllus. Sm.-1769

Pileus 8-15 (25) mm, broad, broadly conic or with an abrupt obtuse or acute umbo, becoming convex-umbonate to campanulate, margin inrolled at first, perfectly glabrous moist, hygrophanous, pale watery grayish brown ("Avellaneous") fading to whitish, closely striate but striae not conspicuous; flesh thin but firm; lamellae close to crowded, narrow, adnate, pale watery gray to whitish, then pale pinkish, edges even; stipe 5-10 cm. long, 1.5-3 mm. thick, equal or nearly so, striate, cartilaginous base white mycelioid, remainder naked, rarely faintly twisted striate, dark watery gray becoming paler in age.

Spores 7-9 x 5-6 μ , angular-elliptic, hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 28-35 x 8-9 μ , content of many oily-granular; pleurocystidia and cheilocystidia none; gill trama parallel, hyaline in KOH; pileus trama homogeneous, hyphae of cuticular region merely more compactly and radially arranged, hyaline in KOH or dingy near cuticular region; clamp connections none.

Habit, habitat, and distribution: Gregarious on humus in a grassy oak woods, Aug. 9, 1935, Pinckney, Mich., Sm.-1769.

Observations: In a second collection a few fibrils were visible on the stipe. This is in the "Nolanea mammosa" group. The odor and taste were not recorded.

Rhodophyllus Sm.-209

Pileus 3-20 mm. broad, conic, becoming conic-campanulate to expanded umbonate, glabrous, watery gray with a dingy brown apex, (near "avellaneous") fading to pale gray in age, hygrophanous, when moist translucent-striate with conspicuous dark striations; lamellae broad, adnexed subdistant, grayish, becoming flesh color, edges even; stipe 4-8 cm. long 1.5-2 mm. thick, very fragile, grayish to yellowish gray, equal glabrous, white cottony at base.

Spores 7-9 (10) x 6-7 μ , broadly angular-elliptic with rather obscure angles, pinkish in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-34 x 9-11 μ , content homogeneous to somewhat oily-globular; pleurocystidia and cheilocystidia none; gill trama parallel; pileus trama homogeneous, hyphae of surface radial and appressed; clamp connections none.

Habit, habitat and distribution: Scattered on sphagnum, Cotlin Lake Adirondack Mts., N. Y., Aug. 13, 1934, Sm.-209.

Observations: This species is characterized by the pale watery colors, dark striations, obscurely angular spores and fragile consistency.

Rhodophyllus. Sm-39642 (near staurospora?)

Pileus 2-3 cm. broad, broadly conic with a bent-in margin at first, expanding to nearly plane with a minute obsolete conic umbo, surface glabrous, moist, hygrophanous, "wood brown" or darker when fresh and then closely but obscurely translucent striatulate, fading to avellaneous gray on disc first; flesh thin, fragile, brownish, odor and taste none; lamellae close, narrow, depressed-adnate, pale avellaneous, becoming vinaceous from spores, edges even; stipe 3-6 cm. long, equal, fragile, hollow, surface glabrous and naked but when fading appearing silvery streaked from the way the moisture escapes, base with thin white mycelium, concolorous with pileus or with a slight honey-color tone.

Spores 8-10 x 5-6.5 μ , conspicuously angular, tolvate in outline; basidia four-spored, 35-42 x 9-11 μ , content somewhat granular; pleuro- and cheilocystidia none seen; gill trama of sub-parallel pipe-like cells; pileus trama homogeneous.

Habit, habitat and distribution: Gregarious on rich humus at edge of bog, Mud Lake Bog, Cheb. Co., Mich. Aug. 14, 1952. Sm - 39642.

Observations: This is in the wood-brown "Nolanea" series but the spores are characteristic by virtue of being nearly angular-nodulose.

Rhodophyllus Sm.-30302

Pileus 1-3 cm. broad, conic-campanulate with an incurved margin in age, broadly campanulate with a papillate umbo when mature, margin often finally becoming spreading, recurved, wavy or lobed, surface perfectly glabrous and hygrophanous, translucent striate moist, between drab and wood brown, hygrophanous and fading to a dead pale grayish brown, not at all silky or shining when faded; flesh thin, white, odor and taste not distinctive; lamellae grayish (grayer than tilleul buff) young, flesh color in age, close, moderately broad, depressed adnate, edges even; stipe 5-8 cm. long, 1.5-3 mm. thick, slightly enlarged downward, fragile, tubular, perfectly glabrous and naked over all, concolorous with pileus or nearly "drab", base white mycelioid.

Spores 8-10 x 5.5-7.5 μ , angular-ovate, apiculus prominent, nearly hyaline in KOH, yellowish in Melzer's sol.; basidia four-spored, 30-36 x 8-9 μ , homogeneous in KOH; pleurocystidia and cheilocystidia none seen; gill trama parallel, hyaline, no globules seen; pileus trama homogeneous, the pellicular zone of radial hyphae as broad or broader than those of the trama proper and not gelatinous; no clamp connections seen.

Habit, habitat and distribution: Gregarious under cedar, Lower Nisqually River, Mt. Rainier National Park, Wash., Aug. 18, 1948, Sm.-30302.

Observations: